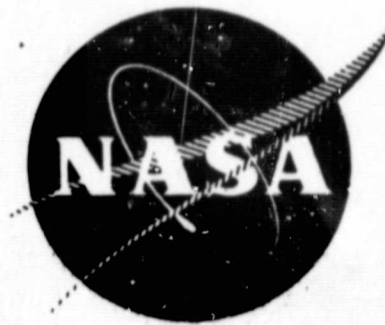


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TASK II STAGE DATA AND PERFORMANCE REPORT
FOR
INLET FLOW DISTORTION TESTING

VOLUME II

**EVALUATION OF RANGE AND DISTORTION TOLERANCE
FOR HIGH MACH NUMBER TRANSONIC FAN STAGES**

By

W.A. Tesch and V.L. Doyle

GENERAL ELECTRIC COMPANY
Aircraft Engine Group
Cincinnati, Ohio 45215

Prepared For

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

January 1971

NASA Lewis Research Center
Contract NAS3-11157
Charles H. Voit Project Manager

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ABSTRACT

A variable geometry fan stage consisting of a 1500 ft/sec tip speed, medium aspect ratio rotor, a variable camber inlet guide vane and a variable stagger stator was tested under conditions of tip radial and 90° one-per-rev circumferential distorted inlet flow. Overall performance and stall limits were determined for each inlet condition at 70%, 90% and 100% of design speed. Extensive surveys of flow conditions were made for the case of circumferential distortion. In addition, blade element data were obtained when testing with radial distortion.

This report is the second of two volumes on the NASA Task II stage data and performance for inlet flow distortion testing. It contains a tabulation of the radial distortion blade element data in Appendix B along with flow survey data and vector diagram results from the circumferential distortion screen rotation tests in Appendix C. Volume I of this report explains the techniques and procedures followed to obtain these data. A summary of distortion test data from Volume I is also included in Volume II for reference.

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APPENDIX A - SYMBOLS

Symbol	Description	Units
A	Annulus or Streamtube Area	in ²
C	Chord Length of Cylindrical Section	in.
C _h	Enthalpy-Equivalent Static-Pressure-Rise Coefficient, ie for Rotor:	---
	$C_h = \frac{2gJc_p t_1 \left[\left(\frac{P_2}{P_1} \right)^{\frac{\gamma-1}{\gamma}} - 1 \right] - (U_2^2 - U_1^2)}{V_1'^2}$	
C _p	Static-Pressure-Rise Coefficient, ie for Rotor:	---
	$C_p = \frac{P_2 - P_1}{P_1' - P_1}$	
c _p	Specific Heat at Constant Pressure, 0.2399 Btu/lb-°R	
D	Diffusion Factor:	---
	$D_{\text{Rotor}} = 1 - \frac{V_2'}{V_1'} + \frac{r_2 V_{\theta_2} - r_1 V_{\theta_1}}{2\bar{r} \sigma V_1'}$	
	$D_{\text{IGV/Stator}} = 1 - \frac{V_2}{V_1} + \frac{r_1 V_{\theta_1} - r_2 V_{\theta_2}}{2\bar{r} \sigma V_1}$	
g	Acceleration Due to Gravity, 32.174 ft/sec ²	
i	Incidence Angle; Difference Between Flow Angle and Camber Line Angle at Leading Edge in Cascade Projection	deg
J	Mechanical Equivalent of Heat, 778.161 ft-lb/Btu.	
K _{bl}	Effective Area Coefficient Due to Wall Boundary Layer Blockage	---
M	Mach Number	---
N	Rotational Speed	rpm

APPENDIX A - SYMBOLS (Continued)

Symbol	Description	Units
P	Total or Stagnation Pressure	psia
p	Static Pressure	psia
r	Radius	in.
\bar{r}	Mean Radius, Average of Streamline Leading and Trailing Edge Radii	in.
T	Total or Stagnation Temperature	°R
t	Static Temperature	°R
U	Rotor Speed	ft/sec
V	Air Velocity	ft/sec
W	Weight Flow	lbs/sec
Z	Displacement Along Compressor Axis	in.
β	Flow Angle; Angle Whose Tangent is the Ratio of Tangential to Axial Velocity	deg
$\Delta\beta$	Flow Turning Angle, $\Delta\beta = \beta_1 - \beta_2$	deg
γ	Ratio of Specific Heats	---
γ°	Blade-Chord Angle (Stagger), Angle in Cascade Projection Between Blade Chord and Axial Direction	deg
δ	Pressure Correction, $P_{\text{Actual}}/14.696 \text{ psia}$	
δ°	Deviation Angle, Difference Between Flow Angle and Camber Angle at Trailing Edge in Cascade Projection	deg
ϵ°	Slope of Meridional Streamline	deg
η	Efficiency	
θ	Temperature Correction, $T_{\text{Actual}}/518.7^\circ\text{R}$	
θ°	Circumferential Position From Top Center	deg

APPENDIX A - SYMBOLS (Continued)

Symbol	Description	Units
K°	Angle Between Tangent to Blade Meanline and the Axial Direction	deg
σ	Solidity, Ratio of Chord to Blade Spacing	---
ϕ°	Camber Angle, Difference Between Angles in Cascade Projection of Tangents to Camberline at the Extremes of the Camberline Arc	deg
$\bar{\omega}$	Total Pressure Loss Coefficient	---
	Rotor: $\bar{\omega}' = \frac{P_2'_{id} - P_2'}{P_1' - p_1}$, IGV/Stator: $\bar{\omega} = \frac{P_1 - P_2}{P_1 - p_1}$	
$\frac{\bar{\omega} \cos \beta_2}{2\sigma}$	Total Pressure Loss Parameter	---
Subscripts		
ad	Adiabatic	
an	Annulus	
d	Downstream Measurement Station (Table III)	
e	Edge of Blade (Figure 7)	
id	Ideal	
j	Immersion	
m	Meridional Direction	
p	Polytropic	
s	Measurement Station (Figure 7)	
t	Tip at Station 1.0	
u	Upstream Measurement Station (Table III)	
z	Axial Direction	
θ	Tangential Direction	

APPENDIX A - SYMBOLS (Concluded)

Subscripts	Description
1	Leading Edge
2	Trailing Edge
0.01	Measurement Station Designation
0.18	Measurement Station Designation
0.95	Measurement Station Designation
1.51	Measurement Station Designation
2.20	Measurement Station Designation

Superscripts	Description
'	Relative to Rotor
*	Critical Flow Condition

Table IV. Summary of Distortion Test Data
(a) Summary of Radial Distortion Data

Reading Number	Percent Design Speed	Discharge Valve Setting	Inlet Corrected Weight Flow	Stage Total Pressure Ratio	Stage Adiabatic Efficiency	Type Point*	IGV/Stator Schedule
96	70	30	169.1	1.211	0.770	OP	0°/0°
97	70	30	133.8	1.120	0.785	OP	40°/8°
98	70	6.5	111.1	1.200	0.788	OP	40°/8°
99	70	13	120.3	1.166	0.787	OP	40°/8°
100	70	9.0	151.0	1.289	0.813	OP	0°/0°
101	70	14	160.1	1.264	0.829	OP	0°/0°
102	90	30	203.4	1.321	0.690	OP	0°/0°
103	90	10.8	196.1	1.490	0.796	OP	0°/0°
104	90	15	199.9	1.426	0.772	OP	0°/0°
105	90	30	157.4	1.190	0.746	OP	40°/8°
106	90	8	143.4	1.323	0.783	OP	40°/8°
107	90	10.5	148.2	1.295	0.791	OP	40°/8°
108	100	30	164.8	1.211	0.690	OP	40°/8°
109	100	12	161.6	1.340	0.773	OP	40°/8°
110	100	15	162.9	1.303	0.760	OP	40°/8°
111	100	30	217.6	1.377	0.667	OP	0°/0°
112	100	10	214.3	1.620	0.773	OP	0°/0°
113	100	15	216.2	1.512	0.745	BE	0°/0°
114	100	30	216.7	1.379	0.671	OP	0°/0°
115	100	15	164.9	1.304	0.762	BE	40°/8°
116	70	30	129.3	1.122	0.795	BE	40°/8°
117	70	6.5	113.1	1.200	0.797	BE	40°/8°
118	70	14	159.6	1.265	0.822	BE	0°/0°
* OP - Overall Performance Reading BE - Blade Element Performance Reading							

Table IV. Summary of Distortion Test Data (Concluded)
(b) Summary of Circumferential Distortion Data

Reading Number	Percent Design Speed	Discharge Valve Setting	Inlet Corrected Weight Flow	Stage Total Pressure Ratio	Stage Adiabatic Efficiency	Type Point*	Distortion Screen Pos. From TDC	IGV/Stator Schedule
1	70	50	172.3	1.197	0.741	OP	195	0°/0°
2	70	4.5	134.4	1.308	0.771	OP	195	
3	70	11	154.6	1.277	0.814	OP	195	
4	90	30	206.7	1.344	0.741	OP	195	
5	90	8.5	190.3	1.525	0.800	OP	195	
6	90	11	197.8	1.491	0.817	OP	195	
7	100	30	221.3	1.407	0.711	OP	195	
8	100	9.5	211.6	1.639	0.796	OP	195	
9	100	12	218.5	1.593	0.801	OP	195	
10-21	100	30	221.5	1.407	0.715	SRT	195-165	
22-33	100	9.5	211.8	1.644	0.748	SRT	195-165	0°/0° 40°/8°
34-45	70	11	153.8	1.274	0.838	OP	195-165	
46	70	50	127.3	1.109	0.840	OP	195	
47	70	5	108.5	1.205	0.778	OP	195	
48	70	10	117.2	1.181	0.836	OP	195	
49	90	30	156.9	1.190	0.816	OP	195	
50	90	6	140.4	1.339	0.775	OP	195	
51	90	10	147.7	1.299	0.836	OP	195	
52	100	30	166.1	1.222	0.756	OP	195	
53	100	9.5	160.8	1.372	0.819	OP	195	
54	100	13	163.7	1.328	0.839	OP	195	40°/8°
77-88	70	30	128.2	1.121	0.830	SRT	195-165	
89	70	30	128.5	1.121	0.838	OP	195	
119-130	70	5	109.5	1.205	0.814	SRT	195-165	
131	70	5	109.4	1.207	0.787	OP	195	
132-143	100	13	164.9	1.326	0.806	SRT	195-165	
144	100	13	164.9	1.325	0.822	OP	195	

* OP - Overall Performance Reading

SRT - Screen Rotating Test (12 Circumferential Distortion Screen Positions in 30° Intervals from 195° TDC)

APPENDIX B - LISTING OF RADIAL DISTORTION BLADE ELEMENT DATA

Radial distortion blade element data for the Task II variable-camber inlet guide vane, rotor and variable-stagger stator are presented for the two IGV/stator schedules tested. Symbolic representation of blade element data pertinent to each blade row is found in Table V. Table VI gives the nominal $0^{\circ}/0^{\circ}$ IGV/stator schedule data at 70 and 100% design corrected speed; the $40^{\circ}/8^{\circ}$ IGV/stator schedule data are listed in Table VII.

Table V. Simulated Listing for Symbolic Identification of Column Headings.

INLET GUIDE VANES - NASA TASK II														
BLADE ELEMENT PERFORMANCE RESULTS														
POINT NUMBER READING NUMBER DATE / 1970														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL				
1	*N/A	θ_1	α_1	1	N/A	V_1	N/A	V_{z1}	$V_{\theta 1}$	N/A				
2														
3														
4														
5														
6														
7														
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL				
1	N/A	θ_2	α_2	δ	$\Delta\theta$	V_2	N/A	V_{z2}	$V_{\theta 2}$	N/A				
2														
3														
4														
5														
6														
7														
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS IR TL PRESS COEFFICIENT	LOSS PARAM								
1	N/A	M_1	N/A	$\frac{V_{z2}}{V_{z1}}$	$\bar{\omega}$	$\frac{\bar{\omega} \cos \beta_2}{2\sigma}$								
2														
3														
4														
5														
6														
7														
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY										
1	N/A	M_2	N/A	σ										
2														
3														
4														
5														
6														
7														
OVERALL PERFORMANCE SUMMARY														
PERFORMANCE PARAMETERS														
STAGE DATA IGV DATA														
FIXED INST. TRAV. INST.														
Total Pressure Ratio = $\frac{P_{0.95}}{P_{0.18}}$														
Polytropic Efficiency = $\frac{\eta_p}{\eta_{p0.18}}$														
Percent Design Speed = $\frac{\omega}{\omega_{0.95}}$														
Cor. Nozzle Weight Flow = $\frac{W}{W_{0.95}}$														
Discharge Valve Setting = IGV/Stator														
Vane Schedule														
TE Check Flow/Noz.Flow =														
Assumed IE Flow Coeff. =														
MOMEN RISE/ MEAS T RISE STAT PRESS RISE COEFF														
N/A C_p														

*Not Applicable

Table V. Simulated Listing for Symbolic Identification of Column Headings (Continued).

ROTOR BLADE ROW - NASA TASK II														
BLADE ELEMENT PERFORMANCE RESULTS														
POINT NUMBER														
DATE / 1970														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHBR LN LE ANGLE	INCID ANG MN CHBR LN	SUCT SJRF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL				
1	θ'_1	θ_1	α'_1	1	M/A	V_1	V'_1	V_{z1}	$V_{\theta 1}$	$V'_{\theta 1}$				
2														
3														
4														
5														
6														
7														
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHBR LN TE ANGLE	REL DEV ANG TE	REL TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL				
1	θ'_2	θ_2	α'_2	θ°	δ°	V_2	V'_2	V_{z2}	$V_{\theta 2}$	$V'_{\theta 2}$				
2														
3														
4														
5														
6														
7														
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO										
1	U_1	M_1	M'_1	$\frac{V_{z2}}{V_{z1}}$										
2														
3														
4														
5														
6														
7														
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY COEFFICIENT	LOSS LOSS PARAM	TOT PRESS EFFICIENCY	ADB EFFICIENCY	POLY MOMEN RISE/ EFFICIENCY	MEAS γ RISE	STAT PRESS RISE COEFF				
1	U_2	M_2	M'_2	σ	$\frac{\omega' \cos \theta'_2}{2\sigma}$	η_{ad}	η_p	C_p						
2														
3														
4														
5														
6														
7														
OVERALL PERFORMANCE SUMMARY														
PERFORMANCE PARAMETERS														
STAGE DATA ROTOR DATA ROTOR DATA														
FIXED INST. FIXED INST. TRAV. INST.														
P 2.20/P 0.18 1.51/P 0.95 1.51/P 0.95														
Total Pressure Ratio = $\frac{P_{1.51}}{P_{0.95}}$														
Adiabatic Efficiency = $\frac{\eta_{ad}}{\eta_p}$														
Polytropic Efficiency = $\frac{\eta_{ad}}{\eta_p}$														
Percent Design Speed = $\frac{\omega/\omega'}{\sqrt{\rho/\rho'}} = \frac{4\pi/\sqrt{\rho}}{\sqrt{\rho'}}$														
Cor. Nozzle Weight Flow = $\frac{W}{W'}$														
Discharge Valve Setting = IGW/Stator														
Vane Schedule														
TE Check Flow/Moz.Flow =														
Assumed IE Flow Coeff. =														

STATOR BLADE 30W - NASA TASK II											
BLADE ELEMENT PERFORMANCE RESULTS											
POINT NUMBER / DATE											
RADIAL POSITION	REF INLET FLOW ANG	ABS INLET FLOW ANG	CMB LN LE ANGLE	MN CMB LN	INCID ANG	SUCT SJFE	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX TANG VEL	INLET ABS TANG VEL	INLET REL TANG VEL
1											
2											
3	*N/A	θ_1	α_1^o	1	N/A		V_1	N/A	V_{z1}	$V_{\theta 1}$	N/A
4											
5											
6											
7											
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMB LN TE ANGLE	DEV ANG DE	TURN ANGLE		EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX TANG VEL	EXIT ABS TANG VEL	EXIT REL TANG VEL
1											
2											
3	N/A	θ_2	α_2^o	ϕ^o	$\Delta \theta$		V_2	N/A	V_{z2}	$V_{\theta 2}$	N/A
4											
5											
6											
7											
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO							CH1
1											
2											
3	N/A	M_1	N/A	$\frac{V_{z2}}{V_{z1}}$						D	C_h
4											
5											
6											
7											
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	σ	LOSS COEFFICIENT	TOT PRESS LOSS PARAM	ADB EFFICIENCY	POLY MOMEN RISE/ EFFICIENCY MEAS T RISE	STAT PRESS RISE COEFF		
1											
2											
3	N/A	K_z	N/A	ω		$\bar{\omega} \cos \beta_2$	N/A	η_p		C_p	
4											
5											
6											
7											
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	OVERALL PERFORMANCE SUMMARY					
1	5.0000					STAGE DATA STATOR DATA STATOR DATA					
2	10.0000					FIXED INST. FIXED INST. TRAV. INST.					
3	30.0000	$\frac{P_{2.2}}{P_{1.51}}$	$\frac{T_{2.2}}{T_{1.51}}$	$\frac{P_{2.2}}{P_{1.51}}$	$\frac{T_{2.2}}{T_{1.51}}$	$P_{2.2}/P_{1.51}$ $P_{2.2}/P_{1.51}$ $P_{2.2}/P_{1.51}$ $P_{2.2}/P_{1.51}$					
4	90.0000					η_p η_p η_p η_p					
5	70.0000					Discharge Valve Setting = 10W/Stator					
6	90.0000					TE Check Flow/Noz.Flow = Assumed TE Flow Coeff. =					
7	95.0000					Assumed LE Flow Coeff. =					

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0°.

INLET GUIDE VANES - NASA TASK II																			
BLADE ELEMENT PERFORMANCE RESULTS																			
POINT NUMBER 17 READING NUMBER 112 DATE 5/19/1970																			
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHMR LN LE ANGLE	INCLD ANG	INCLD SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL									
1		-0.82	0.	-0.82	420.31	420.31	420.26	420.26	56.62	56.62									
2		-1.24	0.	-1.24	411.21	411.21	411.11	411.11	58.89	58.89									
3		-0.43	0.	-0.43	401.18	401.18	401.12	401.12	53.04	53.04									
4		-1.09	0.	-1.09	724.59	724.59	724.34	724.34	13.77	13.77									
5		0.15	0.	0.15	777.15	777.15	776.32	776.32	2.02	2.02									
6		0.13	0.	0.13	750.14	750.14	749.07	749.07	1.74	1.74									
7		0.97	0.	0.97	749.60	749.60	748.86	748.86	12.74	12.74									
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHMR LN TE ANGLE	DEV ANGLE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL									
1		-4.63	0.	-4.63	3.81	504.23	502.54	502.54	40.70	40.70									
2		-4.84	0.	-4.84	3.60	517.63	515.18	515.18	43.61	43.61									
3		-0.70	0.	-0.70	0.26	619.62	619.27	619.27	57.54	57.54									
4		-0.42	0.	-0.42	0.67	782.13	779.74	779.74	55.68	55.68									
5		-0.54	0.	-0.54	0.69	734.24	727.42	727.42	56.90	56.90									
6		-1.05	0.	-1.05	1.18	646.92	631.00	631.00	11.57	11.57									
7		-0.27	0.	-0.27	1.24	594.00	573.35	573.35	22.70	22.70									
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS COEFF	IR TL PRESS LOSS PARAM	DIFFUSION FACTOR				MOMEN RISE/ STAY PRESS MEAS I RISE								
1		0.381		1.196	0.270	0.103	0.168	0.168	0.168	0.168	0.701	0.701	0.701	0.701					
2		0.373		1.253	0.110	0.042	0.225	0.225	0.225	0.225	0.688	0.688	0.688	0.688					
3		0.363		1.544	-0.136	-0.050	0.540	0.540	0.540	0.540	0.270	0.270	0.270	0.270					
4		0.674		1.077	0.035	0.032	0.083	0.083	0.083	0.083	0.286	0.286	0.286	0.286					
5		0.725		0.937	0.051	0.037	0.059	0.059	0.059	0.059	0.050	0.050	0.050	0.050					
6		0.697		0.642	0.029	0.009	0.143	0.143	0.143	0.143	0.219	0.219	0.219	0.219					
7		0.698		0.766	0.080	0.023	0.213	0.213	0.213	0.213	0.235	0.235	0.235	0.235					
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY	OVERALL PERFORMANCE SUMMARY														
1		0.461		1.3090	PERFORMANCE PARAMETERS					STAGE DATA					IGV DATA				
2		0.473		1.3170	FIXED INST.					FIXED INST.					TRAV. INST.				
3		0.573		1.3610	Total Pressure Ratio =					1.6198					0.9917				
4		0.737		1.4190	Polytropic Efficiency =					0.7875					0.5719				
5		0.688		1.5020	Percent Design Speed = 100.0					Discharge Valve Setting = 10.0					Vane Schedule				
6		0.600		1.6460	Cor. Nozzle Weight Flow = 214.32														
7		0.548		1.7160															
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT	TRAV TOT	FIXED TOT	FIXED TOT	TEMP RATIO	TEMP RATIO	TEMP RATIO	TEMP RATIO	TEMP RATIO	TEMP RATIO	TEMP RATIO	TEMP RATIO	TEMP RATIO					
1	5.0000	0.974	0.994	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997					
2	10.0000	0.990	0.997	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998					
3	30.0000	1.012	0.997	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998					
4	50.0000	0.991	0.989	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992	0.992					
5	70.0000	0.985	0.983	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991					
6	90.0000	0.992	0.982	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991					
7	95.0000	0.978	0.986	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993					

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

ROTOR BLADE ROW - NASA TASK II													
BLADE ELEMENT PERFORMANCE RESULTS													
POINT NUMBER 17 DATE 5/19/1970													
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN	INCID ANG	REL TURN ANGLE	EXIT ABS VELOCITY	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL	INLET ABS TANG VEL	INLET REL TANG VEL
1	69.63	64.23	61.28	8.35	10.63	788.50	591.03	1597.81	555.84	607.12	833.86	641.08	1456.63
2	68.64	64.36	60.25	8.39	12.66	805.62	578.69	1579.34	574.88	574.24	835.82	643.86	1470.15
3	60.76	60.60	57.07	3.69	11.97	858.92	722.73	1479.32	722.68	543.90	735.82	57.53	1293.78
4	48.49	60.31	58.90	5.41	5.28	858.92	1019.41	1535.45	1016.21	488.94	662.61	55.56	1148.23
5	46.04	60.39	50.80	4.76	18.86	844.33	982.89	1406.00	969.64	520.87	580.55	56.58	1005.40
6	46.35	60.73	48.58	22.23	31.84	780.26	844.33	1192.96	810.75	563.32	333.87	50.39	845.89
7	46.92	60.18	48.02	51.10	31.84	780.26	780.26	1112.92	741.99	682.32	180.85	52.35	793.59
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN	REL DEV ANGLE	REL TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL	EXIT ABS TANG VEL	EXIT REL TANG VEL	EXIT ABS TANG VEL
1	58.99	58.47	57.52	1.47	10.63	788.50	973.64	500.98	607.12	833.86	641.08	1456.63	1456.63
2	55.98	45.55	57.18	21.20	12.66	805.62	1007.90	563.32	574.24	835.82	643.86	1470.15	1470.15
3	48.78	40.16	52.85	34.07	11.97	858.92	978.23	644.50	543.90	735.82	662.61	1148.23	1148.23
4	43.21	34.73	46.10	22.89	5.28	858.92	968.37	705.32	488.94	662.61	580.55	1005.40	1005.40
5	39.07	40.19	34.70	4.37	18.86	844.33	735.05	640.19	563.32	333.87	333.87	50.39	845.89
6	27.49	41.35	16.84	10.65	31.84	844.33	713.51	671.13	682.32	180.85	180.85	52.35	793.59
7	15.08	45.47	10.70	4.38	31.84	970.54	713.51	671.13	682.32	180.85	180.85	52.35	793.59
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	LOSS	TOY PRESS LOSS PARAM	EFFICIENCY	ADB	POLY MOMEN RISE/ MEAS T RISE	STAT PRESS RISE COEFF	DIFFUSION FACTOR	CH1
1	1455.56	0.515	1.468	0.901	0.229	0.229	0.041	0.7548	0.7548	0.7755	0.277	0.532	0.384
2	1426.29	0.533	1.454	0.986	0.139	0.139	0.036	0.7956	0.7956	0.8132	0.295	0.495	0.415
3	1283.25	0.676	1.384	0.892	0.089	0.089	0.002	0.9890	0.9890	0.9899	0.386	0.454	0.409
4	1142.68	1.000	1.106	0.694	0.114	0.114	0.024	0.8254	0.8254	0.8359	0.389	0.460	0.494
5	998.81	0.957	1.370	0.635	0.103	0.103	0.020	0.8543	0.8543	0.8631	0.463	0.529	0.537
6	839.50	0.803	1.140	0.790	0.109	0.109	0.022	0.8792	0.8792	0.8848	0.514	0.496	0.515
7	791.24	0.735	1.049	0.905	0.110	0.110	0.023	0.8906	0.8906	0.8976	0.460	0.496	0.485
OVERALL PERFORMANCE SUMMARY													
RADIAL POSITION	PERCENT DIMENSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	PERFORMANCE PARAMETERS	STAGE DATA	ROTOR DATA	ROTOR DATA	FIXED INST. TRAV. INST.	FIXED INST. TRAV. INST.	FIXED INST. TRAV. INST.	FIXED INST. TRAV. INST.
1	5.0000	1.898	1.281	1.881	1.262	Total Pressure Ratio =	1.6198	1.6777	1.6993	0.7725	0.8350	0.8179	0.8179
2	10.0000	1.943	1.263	1.903	1.254	Adiabatic Efficiency =	0.7675	0.8447	0.8310	0.7675	0.8447	0.8310	0.8310
3	30.0000	1.891	1.209	1.870	1.198	Polytropic Efficiency =	100.0	Discharge Valve Setting =	10.0	Discharge Valve Setting =	10.0	Discharge Valve Setting =	10.0
4	50.0000	1.576	1.168	1.551	1.162	Percent Design Speed =	214.32	Vane Schedule	0/0	Vane Schedule	0/0	Vane Schedule	0/0
5	70.0000	1.593	1.177	1.589	1.161	Cor. Nozzle Weight Flow =	100.0	Discharge Valve Setting =	10.0	Discharge Valve Setting =	10.0	Discharge Valve Setting =	10.0
6	90.0000	1.569	1.163	1.589	1.161	TE Check Flow/Moz. Flow =	0.9827	TE Check Flow/Moz. Flow =	0.9451	TE Check Flow/Moz. Flow =	0.9451	TE Check Flow/Moz. Flow =	0.9451
7	95.0000	1.643	1.190	1.592	1.160	Assumed IE Flow Coeff. =	0.9850	Assumed IE Flow Coeff. =	0.9500	Assumed IE Flow Coeff. =	0.9500	Assumed IE Flow Coeff. =	0.9500

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

STATOR BLADE ROW - NASA TASK 18													
BLADE ELEMENT PERFORMANCE RESULTS													
POINT NUMBER 17 READING NUMBER 112 DATE 5/19/1976													
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHMR LN LE ANGLE	INCID ANG MN CHMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL			
1		52.01	39.47	12.54		773.68		476.23	609.73				
2		46.52	39.11	7.41		794.33		546.58	576.36				
3		40.03	39.01	1.02		843.84		645.75	542.40				
4		33.88	39.80	-5.92		867.88		719.57	488.18				
5		37.96	40.86	-8.90		829.78		652.01	508.99				
6		37.95	42.22	-8.27		891.49		697.11	546.98				
7		41.86	42.76	-8.90		989.34		730.12	654.28				
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL			
1		0.23	-11.13	11.36	51.78	604.85		604.04	8.38				
2		0.73	-10.10	10.83	45.79	596.36		596.30	8.64				
3		-0.39	-8.87	8.48	40.42	652.11		651.93	-4.47				
4		-5.01	-8.75	3.74	38.89	627.47		624.63	-54.75				
5		-2.07	-9.10	7.03	40.02	677.59		676.06	-20.42				
6		-2.88	-10.98	7.70	40.83	687.33		684.46	-36.43				
7		-5.73	-12.36	6.63	47.60	636.88		631.20	-68.38				
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO							CHI		
1		0.637		1.268							0.334		
2		0.660		1.091							0.327		
3		0.722		1.010							0.339		
4		0.760		0.868							0.428		
5		0.720		1.037							0.484		
6		0.785		0.982							0.381		
7		0.872		0.865							0.392		
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY COEFFICIENT	LOSS COEFFICIENT	LOSS PARAM	ABS EFFICIENCY	POLY EFFICIENCY	POLY MOMEN MEAS 7 RISE	STAT RISE COEFF			
1		0.495		1.5230	0.128	0.042	0.8907	0.8907		0.313			
2		0.493		1.5440	0.085	0.028	0.7818	0.7818		0.303			
3		0.550		1.6310	0.044	0.014	0.8485	0.8485		0.306			
4		0.536		1.7420	0.045	0.013	0.8939	0.8939		0.389			
5		0.581		1.8800	0.084	0.022	1.4724	1.4724		0.453			
6		0.590		2.0310	0.072	0.018	0.9408	0.9408		0.348			
7		0.543		2.0980	0.074	0.018	0.6898	0.6898		0.358			
OVERALL PERFORMANCE SUMMARY													
STAGE DATA STATOR DATA STATOR DATA													
PERFORMANCE PARAMETERS													
				FIXED INST. FLOW INST. TRAV. INST.									
Total Pressure Ratio =				1.6198				0.9799				0.9917	
Polytropic Efficiency =				0.7875				0.9596				0.5719	
Percent Design Speed = 100.0				Discharge Valve Setting= 10.0									
Cor. Nozzle Weight Flow= 214.32				Vane Schedule									
IE Check Flow/Moz.Flow = 0.9765				TE Check Flow/Moz.Flow = 0.9829									
Assumed IE Flow Coeff. = 0.990				Assumed TE Flow Coeff. = 0.985									

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

STATOR BLADE ROW - NASA TASK 18														
BLADE ELEMENT PERFORMANCE RESULTS														
5/19/1976														
POINT NUMBER 17 READING NUMBER 112 DATE														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHMR LN LE ANGLE	INCID ANG MN CHMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VBL	INLET REL TANG VBL				
1		52.01	39.47	12.54	773.68	794.33	476.25	476.25	609.73	609.73				
2		46.52	39.11	7.41	843.84	867.88	546.58	546.58	976.36	976.36				
3		40.03	39.01	1.02	867.88	891.49	645.75	645.75	948.40	948.40				
4		33.88	39.80	5.92	829.78	891.49	719.57	719.57	488.18	488.18				
5		37.96	40.86	28.90	829.78	891.49	652.01	652.01	508.99	508.99				
6		37.95	42.22	34.27	829.78	891.49	697.11	697.11	548.58	548.58				
7		41.86	42.76	30.90	829.78	891.49	730.12	730.12	654.28	654.28				
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VBL	EXIT REL TANG VBL				
1		0.23	-11.13	11.36	51.78	604.05	604.04	604.04	2.38	2.38				
2		0.73	-10.10	10.83	45.79	596.36	596.30	596.30	2.64	2.64				
3		-0.39	-8.87	8.48	40.42	652.11	651.93	651.93	-4.47	-4.47				
4		-5.01	-8.75	3.74	38.89	627.47	624.63	624.63	-54.75	-54.75				
5		-2.07	-9.10	7.03	40.02	677.59	676.06	676.06	-26.42	-26.42				
6		-2.88	-10.58	7.70	40.83	687.33	684.46	684.46	-36.43	-36.43				
7		-5.73	-12.36	6.63	47.60	636.58	631.20	631.20	-68.38	-68.38				
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	AXIAL VEL RATIO	INLET REL MACH NO	LOSS COEFFICIENT	TOY PRESS LOSS PARAM	ABD EFFICIENCY	POLY MOMEN ROSE/ MEAS T RISE	STAT PRESS RISE COEFF	CHI				
1		0.637	1.268	1.091	0.128	0.042	0.8907	0.8907	0.313	0.313				
2		0.660	1.091	1.010	0.085	0.028	0.7818	0.7818	0.305	0.305				
3		0.722	1.010	0.868	0.044	0.014	0.8485	0.8485	0.306	0.306				
4		0.760	0.868	1.037	0.045	0.013	0.8939	0.8939	0.389	0.389				
5		0.720	0.982	0.982	0.084	0.022	1.4724	1.4724	0.453	0.453				
6		0.785	0.982	0.982	0.072	0.018	0.9408	0.9408	0.348	0.348				
7		0.872	0.865	0.865	0.074	0.018	0.8890	0.8890	0.358	0.358				
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	PERCENT IMMERSION	PERCENT DESIGN SPEED	COR. NOZZLE WEIGHT FLOW	TE CHECK FLOW/NOZ.FLOW	ASSUMED IE FLOW COEFF.				
1		0.495	0.979	0.979	0.970	5.0000	100.0	214.32	0.9765	0.9829				
2		0.493	0.975	0.975	0.978	10.0000								
3		0.550	0.989	0.989	0.987	30.0000								
4		0.536	0.995	0.995	0.985	50.0000								
5		0.581	0.991	0.991	0.976	70.0000								
6		0.590	1.002	1.002	0.976	90.0000								
7		0.543	0.981	0.981	0.970	95.0000								
OVERALL PERFORMANCE SUMMARY														
STAGE DATA STATOR DATA STATOR DATA														
FIXED INST. FIXED INST. TRAV. INST.														
Total Pressure Ratio =						1.6198		0.9799		0.9917				
Polytropic Efficiency =						0.7675		0.9596		0.5719				
Percent Design Speed =						100.0		Discharge Valve Setting=		10.0				
Cor. Nozzle Weight Flow=						214.32		Vane Schedule		= 0/0				
IE Check Flow/Noz.Flow =						0.9765		TE Check Flow/Noz.Flow =		0.9829				
Assumed IE Flow Coeff. =						0.990		Assumed TE Flow Coeff. =		0.985				

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IE Check Flow/Noz.Flow = 0.9741
Assumed IE Flow Coeff. = 0.9900

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

INLET GUIDE VANES - NASA TASK II												
BLADE ELEMENT PERFORMANCE RESULTS												
POINT NUMBER 19 READING NUMBER 114 DATE 5/19/1970												
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL		
1		-0.21	0.	-0.21		431.09		431.09	-1.57			
2		0.16	0.	0.16		416.01		416.01	1.20			
3		-0.51	0.	-0.51		406.34		406.34	-3.65			
4		-1.14	0.	-1.14		776.38		776.38	-15.40			
5		0.37	0.	0.37		780.90		780.90	5.00			
6		0.61	0.	0.61		769.32		769.32	8.17			
7		0.74	0.	0.74		770.41		769.69	9.97			
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL		
1		-1.26	0.	-1.26	1.05	538.85		538.66	-11.85			
2		-1.62	0.	-1.62	1.78	549.92		549.69	-15.53			
3		0.10	0.	0.10	-0.62	621.00		620.69	1.12			
4		1.22	0.	1.22	-2.36	811.08		808.44	17.24			
5		0.44	0.	0.44	-0.07	750.90		743.94	5.67			
6		-0.20	0.	-0.20	0.91	641.64		625.94	-2.24			
7		0.53	0.	0.63	0.11	597.34		576.55	6.34			
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	AXIAL VEL RATIO	TRAV LOSS COEFFICIENT	IR TL PRESS LOSS PARAM	DIFFUSION FACTOR	CW1					
1		0.391	1.250	0.266	0.101	-0.241	-0.819					
2		0.377	1.321	0.108	0.041	-0.307	-0.855					
3		0.368	1.528	-0.162	-0.060	-0.532	-1.198					
4		0.724	1.042	0.039	0.014	-0.060	-0.163					
5		0.729	0.954	0.049	0.016	0.038	0.020					
6		0.717	0.815	0.024	0.007	0.170	0.271					
7		0.720	0.749	0.076	0.022	0.226	0.327					
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	SOLIDITY	MOMEN RISE/ MEAS T RISE	STAT PRESS RISE COEFF							
1		0.494	1.3090		-0.764							
2		0.505	1.3170		-0.800							
3		0.574	1.3610		-1.112							
4		0.768	1.4190		-0.123							
5		0.705	1.5020		0.018							
6		0.594	1.6460		0.248							
7		0.551	1.7160		0.300							
OVERALL PERFORMANCE SUMMARY												
PERFORMANCE PARAMETERS						STAGE DATA		ICV DATA				
						FIXED INST.		TRAV. INST.				
Total Pressure Ratio =						1.3786		0.9916				
Polytropic Efficiency =						0.6860		0.4890				
Percent Design Speed = 100.0						Discharge Valve Setting=30.0						
Cor. Nozzle Weight Flow=216.74						Vane Schedule		=0/0				
IE Check Flow/Noz.Flow = 0.9741						TE Check Flow/Noz.Flow = 0.9809						
Assumed IE Flow Coeff. = 0.9900						Assumed Flow Coeff. = 0.9950						

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

ROTOR BLADE ROW 5 NASA TASH 11		BLADE ELEMENT PERFORMANCE RESULTS		5/19/1970	
20121 NUMBER 19		READING NUMBER 114		DATE	
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN IE ANGLE	INCD ANG MN CMR LN	INLET ABS VELOCITY
1	67.79	-1.14	61.28	6.51	603735
2	66.83	-1.45	60.25	6.58	619770
3	66.53	0.89	57.07	3.44	724770
4	47.93	0.95	53.90	85.99	1013754
5	44.65	0.31	50.80	56.19	1019744
6	46.48	-0.14	48.58	82.18	833739
7	46.40	0.42	48.02	81.62	787701
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN IE ANGLE	INCD ANG MN CMR LN	INLET REL VELOCITY
1	55.82	31.16	57.52	21.70	1586.88
2	56.54	28.70	57.48	20.62	1569.57
3	48.18	30.33	52.85	24.67	1472.95
4	44.68	24.99	46.10	21.42	1518.88
5	41.23	33.77	34.70	6.53	1423.50
6	21.38	35.56	16.84	4.54	1183.73
7	13.75	38.75	10.70	3.05	1112.16
RADIAL POSITION	REL TURN ANGLE	REL DEV ANGLE	REL INLET VELOCITY	REL EXIT VELOCITY	INLET ABS VELOCITY
1	11.97	11.70	1236.44	693.64	599.25
2	10.28	10.62	1245.37	683.52	617.19
3	12.35	12.35	1127.38	751.71	724.69
4	3.26	3.26	1114.03	791.68	1016.19
5	3.42	3.42	883.05	661.10	1005.68
6	25.10	25.10	888.14	810.48	799.33
7	32.65	32.65	871.34	824.26	748.38
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	EXIT ABS VELOCITY
1	1455.79	0.557	1.464	1.158	419.38
2	1426.52	0.573	1.451	1.107	439.83
3	1283.46	0.678	1.378	1.037	368.92
4	1142.86	1.000	1.490	0.779	442.14
5	998.98	1.000	1.396	0.657	579.28
6	839.63	0.791	1.124	1.014	317.24
7	791.37	0.743	1.049	1.101	661.61
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	AXIAL VEL RATIO	EXIT REL VELOCITY
1	1455.79	0.557	1.464	1.158	1021.92
2	1426.52	0.573	1.451	1.107	1034.86
3	1283.46	0.678	1.378	1.037	840.09
4	1142.86	1.000	1.490	0.779	782.82
5	998.98	1.000	1.396	0.657	579.44
6	839.63	0.791	1.124	1.014	317.24
7	791.37	0.743	1.049	1.101	201.70
RADIAL POSITION	PERCENT IMMERISION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO
1	5.0000	1.575	1.184	1.528	1.176
2	10.0000	1.559	1.162	1.579	1.170
3	30.0000	1.600	1.162	1.598	1.150
4	50.0000	1.366	1.118	1.356	1.119
5	70.0000	1.307	1.120	1.326	1.123
6	90.0000	1.520	1.157	1.481	1.147
7	95.0000	1.546	1.175	1.484	1.146
OVERALL PERFORMANCE SUMMARY					
PERFORMANCE PARAMETERS			STAGE DATA ROTOR DATA ROTOR DATA		
Total Pressure Ratio	=	1.3786	FIXED INST.	FIXED INST.	TRAV. INST.
Adiabatic Efficiency	=	0.6714			
Polytropic Efficiency	=	0.6860			
Percent Design Speed	=	100.0	Discharge Valve Setting	=	30.0
Cor. Nozzle Weight Flow	=	216.74	Vane Schedule	=	0/0
DIFFUSION CH1					
DIFFUSION FACTOR		0.315			0.292
		0.294			0.276
		0.327			0.315
		0.332			0.369
		0.459			0.431
		0.362			0.277
		0.348			0.172
POLY MOMEN RISE/ STAT PRESS					
POLY EFFICIENCY		0.7483	MEAS Y RISE		RISE COEFF
		0.8335			0.160
		0.9578			0.178
		0.7761			0.229
		0.6968			0.276
		0.8217			0.354
		0.8302			0.286
					0.221

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

ROTOR BLADE ROW 5 - NASA TASK II													
BLADE ELEMENT PERFORMANCE RESULTS													
POINT NUMBER 19 READING NUMBER 114 DATE 5/19/1970													
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHBR LN IE ANGLE	INCID ANG MN CHBR LN	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL				
1	67.79	-1.14	61.28	6.51	603.35	1586.88	599.25	-11.96	1467.75				
2	66.83	-1.45	60.25	6.58	619.70	1569.57	617.19	-15.62	1442.14				
3	60.53	0.09	57.07	7.46	724.70	1472.55	724.69	1.12	1282.34				
4	47.93	0.95	53.90	95.97	1019.58	1518.88	1016.19	16.87	1125.99				
5	44.65	0.31	50.80	56.19	1019.45	1423.50	1005.68	5.41	993.57				
6	46.46	-0.14	48.58	92.16	832.39	1183.73	799.33	-2.01	841.64				
7	46.40	0.42	48.02	81.62	767.01	1112.16	748.38	5.52	785.85				
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHBR LN TE ANGLE	REL DEV ANG TE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL				
1	55.82	31.16	57.52	9.70	813.12	1236.44	693.64	419.38	1021.52				
2	56.51	28.70	57.18	9.62	781.09	1248.37	683.52	374.23	1034.86				
3	48.16	30.33	52.85	2.67	871.03	1127.38	751.71	439.83	840.09				
4	44.68	24.99	46.10	4.42	874.29	1114.03	791.68	368.92	782.82				
5	41.23	33.77	34.70	6.53	799.70	883.05	661.10	442.14	579.44				
6	21.38	35.56	16.84	4.54	1011.79	888.14	810.48	579.28	317.24				
7	13.75	38.75	10.70	3.05	1075.31	871.34	824.26	661.61	201.70				
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO					DIFFUSION CW1				
1	1455.79	0.557	1.464	1.158					FACTOR				
2	1426.52	0.573	1.451	1.107					0.315				
3	1283.46	0.678	1.378	1.037					0.294				
4	1142.66	1.000	1.490	0.779					0.327				
5	998.98	1.000	1.396	0.657					0.332				
6	839.63	0.791	1.124	1.014					0.431				
7	791.37	0.743	1.049	1.101					0.277				
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY RATIO	LOSS COEFFICIENT	LOSS PARAM	AD8 EFFICIENCY	POLY MOMEN RISE/ MEAS T RISE	STAT PRESS COEFF				
1	1440.91	0.702	1.067	1.4310	0.193	0.036	0.7328	0.7483	0.160				
2	1409.09	0.678	1.078	1.4610	0.121	0.023	0.8224	0.8335	0.178				
3	1279.92	0.765	0.990	1.6126	0.030	0.006	0.9549	0.9578	0.229				
4	1151.74	0.785	1.000	1.7730	0.117	0.024	0.7662	0.7761	0.276				
5	1021.59	0.710	0.784	1.9640	0.173	0.033	0.6844	0.6968	0.354				
6	896.53	0.910	0.798	2.2480	0.157	0.033	0.8116	0.8217	0.286				
7	863.31	0.958	0.784	2.5470	0.164	0.034	0.8204	0.8302	0.221				
OVERALL PERFORMANCE SUMMARY													
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	STAGE DATA ROTOR DATA ROTOR DATA							
1	5.0000	1.575	1.184	1.528	1.176	FIXED INST. FIXED INST. TRAV. INST.							
2	10.0000	1.559	1.162	1.579	1.170								
3	30.0000	1.600	1.162	1.598	1.150								
4	50.0000	1.366	1.118	1.356	1.119								
5	70.0000	1.307	1.120	1.326	1.123								
6	90.0000	1.520	1.157	1.481	1.147								
7	95.0000	1.546	1.175	1.484	1.146								
						PERFORMANCE PARAMETERS							
						Total Pressure Ratio =							
						Adiabatic Efficiency =							
						Polytropic Efficiency =							
						Percent Design Speed = 100.0							
						Cor. Nozzle Weight Flow= 216.74							
						Discharge Valve Setting= 30.0							
						Vane Schedule = 0/0							
						TE Check Flow/Noz.Flow = 0.9593							
						Assumed LE Flow Coeff. = 0.9500							

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

STATOR BLADE ROW - NASA TASK 18													
BLADE ELEMENT PERFORMANCE RESULTS													
POINT NUMBER 19 READING NUMBER 114 DATE 5/19/1978													
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHBR LN LE ANGLE	INCID ANG MN CHBR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL			
1		32.94	39.47	56.53		774.65		650.13	421.19				
2		29.68	39.11	59.43		758.65		659.12	378.61				
3		30.20	39.01	68.81		872.16		753.51	438.62				
4		24.18	39.80	-15.62		891.53		812.04	368.98				
5		31.56	40.86	59.30		828.18		702.83	432.72				
6		30.76	42.22	-11.46		1103.99		939.23	558.98				
7		33.64	42.76	59.12		1158.19		953.33	634.42				
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHBR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL			
1		0.44	-11.13	11.97	32.50	672.78		672.73	9.17				
2		-0.14	-10.10	9.96	29.81	695.94		695.52	8.65				
3		-0.64	-8.87	8.23	30.85	781.79		781.55	58.77				
4		-2.56	-8.75	6.19	26.74	814.19		812.79	-36.41				
5		-4.60	-9.10	4.50	36.16	843.18		811.26	-65.27				
6		-1.95	-10.98	8.83	32.71	997.30		993.81	-39.83				
7		-4.41	-12.36	7.95	38.05	953.89		947.75	-78.04				
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO									
1		0.655		1.035									
2		0.657		1.055									
3		0.766		1.037									
4		0.802		1.001									
5		0.738		1.154									
6		1.008		1.058									
7		1.059		0.994									
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY COEFFICIENT	LOSS COEFFICIENT	TOT PRESS LOSS PARAM	ABD EFFICIENCY	POLY Hohen Rise/ Meas T. Rise	STAT PRESS COEFF				
1		0.573		1.5230	0.126	0.041		0.5438	0.119				
2		0.599		1.5440	0.061	0.020		0.8899	0.129				
3		0.687		1.6310	0.065	0.020		0.8634	0.136				
4		0.723		1.7420	0.118	0.034		0.8144	0.128				
5		0.722		1.8800	0.100	0.026		1.9748	0.888				
6		0.900		2.0510	0.094	0.023		0.5482	0.078				
7		0.852		2.0980	0.106	0.025		0.5011	0.128				
OVERALL PERFORMANCE SUMMARY													
RADIAL POSITION	PERCENT IMMERSED	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO								
1	5.0000	0.966	0.997	0.967	1.000								
2	10.0000	0.995	0.999	0.985	1.000								
3	30.0000	0.990	0.979	0.979	1.000								
4	50.0000	0.986	1.005	0.959	1.000								
5	70.0000	1.015	1.008	0.970	1.000								
6	90.0000	0.946	0.989	0.953	1.000								
7	95.0000	0.890	0.980	0.944	1.000								
STAGE DATA. STATOR DATA STATOR DATA													
FIXED INST. FIXED INST. TRAV. INST.													
										Total Pressure Ratio =	1.3785	0.9881	0.9815
										Polytropic Efficiency =	0.6860	0.9084	0.9615
										Percent Design Speed =	100.0	Discharge Valve Setting =	30.0
										Cor. Nozzle Weight Flow =	216.74	Vane Schedule	= 0/0
										IE Check Flow/Noz. Flow =	0.9593	TE Check Flow/Noz. Flow =	0.9693
										Assumed IE Flow Coeff. =	0.9500	Assumed TE Flow Coeff. =	0.9350

STATOR BLADE ROW - NASA TASK II										
BLADE ELEMENT PERFORMANCE RESULTS										
5/19/1978										
POINT NUMBER 19 READING NUMBER 114 DAYS										
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHMR LN LE ANGLE	INCID ANG MN CHMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL
1		32.94	39.47	56.53		774.65		650.13	421.19	
2		29.68	39.11	59.43		758.65		659.12	378.61	
3		30.20	39.01	58.81		872.16		753.51	438.62	
4		24.18	39.80	-15.62		891.53		812.04	368.98	
5		31.56	40.86	59.30		828.18		702.83	431.72	
6		30.76	42.22	-11.76		1103.99		939.23	558.08	
7		33.64	42.76	59.12		1158.19		953.33	634.42	
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL
1		0.44	-11.13	11.57	32.50	672.78		672.75	9.17	
2		-0.14	-10.10	9.96	29.81	695.54		695.52	-8.65	
3		-0.64	-8.87	8.23	30.85	781.79		781.55	-8.77	
4		-2.56	-8.75	6.19	26.74	814.19		812.79	-34.41	
5		-4.60	-9.10	4.50	36.16	815.18		813.26	-69.27	
6		-1.95	-10.58	8.83	32.71	997.30		993.81	-39.83	
7		-4.41	-12.36	7.95	38.05	953.89		947.75	-78.04	
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	DIFFUSION FACTOR	CHI				
1		0.645		1.035	0.308	0.131				
2		0.657		1.055	0.244	0.141				
3		0.766		1.037	0.260	0.154				
4		0.802		1.001	0.215	0.138				
5		0.738		1.134	0.174	0.072				
6		1.008		1.058	0.125	0.095				
7		1.059		1.094	0.320	0.151				
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY COEFFICIENT	LOSS	TOT PRESS LOSS PARAM	ABR EFFICIENCY	POLY MOMEN RISE/ EFFICIENCY MEAS T. RISE	STAT PRESS COEFF	RISE
1		0.573		1.5230	0.126	0.041		0.5438	0.119	
2		0.599		1.5440	0.061	0.020		0.8899	0.129	
3		0.687		1.5310	0.065	0.020		0.8634	0.136	
4		0.723		1.7420	0.118	0.034		0.9144	0.128	
5		0.722		1.8800	0.100	0.026		1.9748	0.080	
6		0.900		2.0510	0.094	0.023		0.5482	0.076	
7		0.852		2.0980	0.106	0.025		0.5011	0.128	
RADIAL POSITION	PERCENT DOERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO					
1	2.0000	0.966	0.967	0.967	1.000					
2	10.0000	0.995	0.999	0.985	1.000					
3	30.0000	0.990	0.979	0.979	1.000					
4	50.0000	0.986	1.005	0.959	1.000					
5	70.0000	1.015	1.008	0.970	1.000					
6	90.0000	0.946	0.989	0.953	1.000					
7	95.0000	0.890	0.980	0.944	1.000					
OVERALL PERFORMANCE SUMMARY										
STAGE DATA STATOR DATA STATOR DATA										
FIXED INST. FIXED INST. TRAV. INST.										
Total Pressure Ratio =		1.3786		0.9681						
Polytropic Efficiency =		0.6960		0.9084						
Percent Design Speed =		100.0		Discharge Valve Setting= 30.0						
Cor. Nozzle Weight Flow=		216.74		Vane Schedule						
LE Check Flow/Noz.Flow =		0.9593		TE Check Flow/Noz.Flow = 0.9693						
Assumed LE Flow Coeff. =		0.9500		Assumed Flow Coeff. = 0.9350						

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

INLET GUIDE VANES - NASA TASK II											
BLADE ELEMENT PERFORMANCE RESULTS											
POINT NUMBER 23 READING NUMBER 118 DATE 5/19/1970											
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHBR LN LE ANGLE	INCD ANG MN CHBR LN	INCD ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL	
1		1.64	0.	1.64		270.55		270.43	7.76		
2		2.01	0.	2.01		273.47		273.30	9.57		
3		2.49	0.	2.49		287.51		287.46	2.44		
4		2.88	0.	2.88		489.85		489.58	7.49		
5		3.32	0.	3.32		532.30		531.72	22.97		
6		3.80	0.	3.80		513.65		512.92	20.01		
7		4.28	0.	4.28		513.09		512.62	6.14		
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHBR LN TE ANGLE	ANG TE	DEV	TURN ANGLE	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL	
1		2.01	0.	2.01		312.35		312.13	10.94		
2		2.49	0.	2.49		324.27		324.25	1.76		
3		2.88	0.	2.88		383.27		383.08	0.44		
4		3.32	0.	3.32		550.78		548.41	21.27		
5		3.80	0.	3.80		531.13		526.22	1.76		
6		4.28	0.	4.28		458.88		447.49	12.57		
7		4.76	0.	4.76		423.48		408.76	11.67		
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS TR IL PRESS COEFFICIENT	LOSS	DIFFUSION FACTOR				
1		0.243		1.154	0.211	0.081	0.159				
2		0.246		1.186	0.038	0.033	0.175				
3		0.259		1.333	0.050	0.022	0.331				
4		0.447		1.120	0.019	0.007	0.127				
5		0.488		0.990	0.052	0.017	0.001				
6		0.470		0.872	0.028	0.009	0.099				
7		0.469		0.797	0.080	0.023	0.179				
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY					MOMEN RISE/ MEAS T RISE	STAT PRESS RISE COEFF	
1		0.292		1.3090							
2		0.293		1.3170							
3		0.347		1.3610							
4		0.505		1.4190							
5		0.487		1.5020							
6		0.418		1.6460							
7		0.385		1.7160							
RADIAL POSITION	PERCENT IMMERSION	TRAV IOI PRESS RATIO	TRAV IOI TEMP RATIO	FIXED IOI PRESS RATIO	FIXED IOI TEMP RATIO					OVERALL PERFORMANCE SUMMARY	
1	5.0000	0.991	0.996	0.996	1.000					STAGE DATA	IGV DATA
2	10.0000	0.996	0.996	0.999	1.000					FIXED INST.	TRAV. INST.
3	30.0000	1.003	0.997	0.999	1.000					1.2635	0.9961
4	50.0000	0.998	0.998	0.997	1.000					0.8280	----
5	70.0000	0.992	0.999	0.996	1.000						
6	90.0000	0.996	0.999	0.997	1.000					Discharge Valve Setting=14.0	
7	95.0000	0.999	0.999	0.997	1.000					Vane Schedule	=0/0
TE Check Flow/Noz.Flow =1.0529											
Assumed IE Flow Coeff. =0.9850											

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

INLET GUIDE VANES - NASA TASK II														
BLADE ELEMENT PERFORMANCE RESULTS														
POINT NUMBER 23 READING NUMBER 118 DATE 5/19/1970														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL				
1		1.64	0.	1.64		270.55		270.43	7.76					
2		2.01	0.	2.01		273.47		273.30	9.57					
3		0.49	0.	0.49		287.51		287.46	2.44					
4		0.88	0.	0.88		489.85		489.58	7.49					
5		0.32	0.	0.32		532.30		531.72	2.97					
6		0.00	0.	0.00		513.65		512.92	0.01					
7		0.69	0.	0.69		513.09		512.62	6.14					
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL				
1		2.01	0.	2.01	0.36	312.35		312.13	10.94					
2		0.31	0.	0.31	1.70	324.27		324.26	1.76					
3		0.07	0.	0.07	0.42	383.27		383.08	0.44					
4		0.13	0.	0.13	0.74	550.08		548.41	21.27					
5		0.19	0.	0.19	0.51	531.13		526.22	1.76					
6		1.61	0.	1.61	21.61	458.88		447.49	12.57					
7		0.23	0.	0.23	0.92	423.48		408.76	11.67					
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS COEFFICIENT	TR TL PRESS LOSS PARAM	DIFFUSION FACTOR	CM1						
1		0.243		1.154	0.211	0.081	0.159	0.159	0.159	0.159				
2		0.246		1.186	0.088	0.033	0.175	0.175	0.175	0.175				
3		0.259		1.333	0.060	0.022	0.331	0.331	0.331	0.331				
4		0.447		1.120	0.019	0.007	0.127	0.127	0.127	0.127				
5		0.488		0.920	0.052	0.017	0.001	0.001	0.001	0.001				
6		0.470		0.872	0.026	0.009	0.099	0.099	0.099	0.099				
7		0.469		0.797	0.080	0.023	0.179	0.179	0.179	0.179				
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY	MOMENT RISE/MEAS T RISE									
1		0.282		1.3090	STAT PRESS COEFF									
2		0.293		1.3170	STAT PRESS COEFF									
3		0.347		1.3610	STAT PRESS COEFF									
4		0.505		1.4190	STAT PRESS COEFF									
5		0.487		1.5020	STAT PRESS COEFF									
6		0.418		1.6460	STAT PRESS COEFF									
7		0.395		1.7160	STAT PRESS COEFF									
OVERALL PERFORMANCE SUMMARY														
PERFORMANCE PARAMETERS					STAGE DATA					IGV DATA				
FIXED INST.					FIXED INST.					TRAV. INST.				
Total Pressure Ratio =					1.2635					0.9961				
Polytropic Efficiency =					0.8280					-----				
Percent Design Speed = 70.1					Discharge Valve Setting=14.0					=0/0				
Cor. Nozzle Weight Flow=159.64					Vane Schedule					=0/0				
LE Check Flow/Noz.Flow = 1.0495					TE Check Flow/Noz.Flow = 1.0529					Assumed TE Flow Coeff. = 0.9850				
Assumed LE Flow Coeff. = 0.9900														

Table VI. Radial Distortion Data with IGV/Stator Schedule 0°/0° (Continued).

ROTOR BLADE ROW 2 NASA TASK 11										
BLADE ELEMENT PERFORMANCE RESULTS										
POINT NUMBER		23		READING NUMBER 118		DATE		5/19/1970		
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	CMR LN MN CMR LN	INCD ANG	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL
1	71.41	1.96	61.28	10.13	0.93	341.65	1064.72	339.22	11.04	1088.48
2	70.41	0.29	60.25	10.16	0.90	356.16	1058.94	354.83	1.77	997.25
3	64.56	0.06	57.07	7.49	0.90	427.33	994.85	427.33	0.44	898.40
4	52.30	0.11	53.90	51.60	0.90	621.54	1014.34	619.60	1.24	801.61
5	49.41	0.16	50.80	51.39	0.90	606.25	924.47	598.09	1.68	697.93
6	47.77	1.24	48.58	-0.81	0.90	545.28	793.61	523.51	11.29	576.73
7	48.55	0.17	48.02	0.53	0.90	516.05	758.33	490.74	11.45	595.66
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN LE ANGLE	CMR LN MN CMR LN	INCD ANG	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL
1	58.45	38.80	57.52	0.93	0.93	793.68	793.68	414.82	333.55	675.55
2	56.28	38.79	57.18	0.90	0.90	550.93	722.92	428.63	344.50	642.31
3	48.74	32.42	52.85	4.11	0.90	538.31	765.85	505.03	320.69	575.66
4	41.96	28.48	46.14	4.14	0.90	637.09	752.93	559.49	303.48	503.11
5	34.42	34.78	34.70	0.28	0.90	648.75	668.33	548.35	339.70	375.74
6	22.02	36.93	16.84	5.18	0.90	689.65	597.70	543.09	408.20	239.66
7	15.88	40.58	10.70	5.18	0.90	709.24	565.48	529.96	453.84	150.75
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	REL TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL
1	1019.52	0.309	0.962	1.223	12.96	793.68	793.68	414.82	333.55	675.55
2	999.02	0.322	0.958	1.208	14.13	550.93	722.92	428.63	344.50	642.31
3	898.83	0.388	0.904	1.182	15.92	538.31	765.85	505.03	320.69	575.66
4	800.37	0.575	0.938	0.903	18.34	637.09	752.93	559.49	303.48	503.11
5	699.60	0.560	0.953	0.917	14.99	648.75	668.33	548.35	339.70	375.74
6	588.01	0.500	0.728	1.037	25.75	689.65	597.70	543.09	408.20	239.66
7	554.21	0.472	0.694	1.086	32.67	709.24	565.48	529.96	453.84	150.75
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY COEFFICIENT	LOSS	TOT PRESS LOSS	EFFICIENCY	ADB EFFICIENCY	POLY MOMEN RISE/ RISE	STAT PRESS COEFF
1	1009.10	0.462	0.687	1.4310	0.202	0.037	0.7315	0.7418	0.7418	0.261
2	986.81	0.477	0.669	1.4610	0.174	0.033	0.7692	0.7784	0.7784	0.275
3	896.36	0.527	0.675	1.6120	0.004	0.001	1.8327	1.8055	1.8055	0.314
4	806.59	0.568	0.672	1.7730	0.048	0.010	0.9106	0.9134	0.9134	0.337
5	715.44	0.578	0.596	1.9640	0.036	0.008	0.9428	0.9446	0.9446	0.397
6	627.86	0.616	0.534	2.2480	0.057	0.012	0.9342	0.9365	0.9365	0.422
7	604.60	0.632	0.504	2.3470	0.059	0.012	0.9392	0.9414	0.9414	0.417
OVERALL PERFORMANCE SUMMARY										
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	PERFORMANCE PARAMETERS				
1	5.0000	1.313	1.116	1.318	1.113	STAGE DATA ROTOR DATA ROTOR DATA				
2	10.0000	1.328	1.119	1.332	1.114	FIXED INST. FIXED INST. TRAV. INSTR.				
3	30.0000	1.328	1.090	1.338	1.086					
4	50.0000	1.250	1.072	1.245	1.071	Total Pressure Ratio = 1.2553 1.2041 1.2902				
5	70.0000	1.260	1.076	1.258	1.072	Adiabatic Efficiency = 0.8221 0.8755 0.8602				
6	90.0000	1.284	1.081	1.277	1.075	Polytropic Efficiency = 0.8280 0.8799 0.8651				
7	95.0000	1.301	1.090	1.294	1.081	Percent Design Speed = 70.1 Discharge Valve Settings= 14.0				
						Cor. Nozzle Weight Flow= 159.64 Vane Schedule = 0/0				
IE Check Flow/Noz.Flow = 1.0527 IE Check Flow/Noz.Flow = 1.0222										
Assumed IE Flow Coeff. = 0.9850 Assumed TE Flow Coeff. = 0.9500										

Table VI. Radial Distortion Data with IGV/Stator Schedule $0^\circ/0^\circ$ (Continued).

ROTOR BLADE ROW - NASA TASK II									
BLADE ELEMENT PERFORMANCE RESULTS									
POINT NUMBER 23 READING NUMBER 118 DATE 5/19/1970									
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCLD ANG MN CMR LN	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL
1	71.41	1.86	61.28	10.13	341.65	1064.72	339.22	11.04	1008.48
2	70.41	0.29	60.25	10.16	356.16	1058.94	354.83	1.77	997.25
3	64.56	0.06	57.07	7.49	427.33	994.85	427.33	0.44	898.40
4	52.30	0.11	53.90	61.60	621.54	1014.34	619.60	1.24	801.61
5	49.41	0.16	50.80	61.39	608.25	924.47	598.09	1.68	697.93
6	47.77	1.24	48.58	-0.81	545.28	793.61	523.51	11.29	576.73
7	48.55	0.17	48.02	0.53	516.05	758.33	490.74	1.45	555.66
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	REL DEV ANG TE	REL TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL
1	58.45	38.80	57.52	0.93	12.96	793.68	414.82	414.82	675.55
2	56.28	38.79	57.18	0.90	14.13	596.93	428.63	344.50	642.31
3	48.74	38.42	52.85	0.82	15.82	598.31	505.03	320.69	575.66
4	41.96	28.48	46.10	0.84	16.34	637.09	559.49	303.48	503.11
5	34.42	31.78	34.70	0.28	14.99	688.75	548.35	339.70	375.74
6	22.02	36.93	16.84	5.18	23.75	689.65	543.09	408.20	239.66
7	15.88	40.58	10.70	5.18	32.67	705.24	565.48	453.84	150.75
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	TOT PRESS LOSS	ADB EFFICIENCY	POLY MOMEN RISE/ MEAS T RISE	STAT PRESS RISE COEFF
1	1019.52	0.309	0.962	1.223	0.202	0.037	0.7315	0.7418	0.261
2	999.02	0.322	0.958	1.208	0.174	0.033	0.7892	0.7784	0.275
3	898.83	0.388	0.904	1.182	0.004	1.0055	1.0055	0.9134	0.314
4	800.37	0.575	0.938	0.903	0.048	0.010	0.9106	0.9446	0.337
5	699.60	0.560	0.853	0.917	0.036	0.008	0.9428	0.9345	0.397
6	588.01	0.500	0.728	1.037	0.057	0.012	0.9342	0.9345	0.422
7	554.21	0.472	0.634	1.086	0.059	0.012	0.9392	0.9414	0.417
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY	COEFFICIENT	LOSS	LOSS	LOSS	LOSS
1	1009.10	0.462	0.687	1.4310	0.202	0.037	0.7315	0.7418	0.261
2	986.81	0.477	0.669	1.4610	0.174	0.033	0.7892	0.7784	0.275
3	896.36	0.527	0.675	1.6120	0.004	1.0055	1.0055	0.9134	0.314
4	806.59	0.568	0.672	1.7730	0.048	0.010	0.9106	0.9446	0.337
5	715.44	0.578	0.596	1.9640	0.036	0.008	0.9428	0.9345	0.397
6	627.86	0.616	0.534	2.2480	0.057	0.012	0.9342	0.9345	0.422
7	604.60	0.632	0.504	2.3470	0.059	0.012	0.9392	0.9414	0.417
OVERALL PERFORMANCE SUMMARY									
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	STAGE DATA Rotor Data			
1	5.0000	1.313	1.116	1.318	1.113	FIXED INST. FIXED INST. TRAV. INST.			
2	10.0000	1.328	1.119	1.332	1.111	1.2653 1.28			

Table VI. Radial Distortion Data with IGV/Stator Schedule 0,0° (Concluded).

STATOR BLADE ROW - NASA TASK 18													
BLADE ELEMENT PERFORMANCE RESULTS													
POINT NUMBER 23 READING NUMBER 118 DATE 5/19/1976													
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL	RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG
1		40.27	39.47	0.80		518.22		395.39	334.98		1		0.34
2		39.65	39.11	0.54		541.87		417.19	349.77		2		1.65
3		32.30	39.01	0.71		598.64		505.83	319.81		3		-3.11
4		27.81	39.80	-11.99		643.76		568.56	299.90		4		-4.05
5		29.87	40.86	-10.99		668.78		577.51	331.69		5		-3.33
6		33.93	42.22	0.29		712.27		585.48	398.89		6		-2.02
7		37.46	42.76	0.50		722.91		567.92	438.19		7		-2.43
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL	RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO
1		0.34	-11.13	11.47	39.93	448.95		442.94	2.67		1		0.448
2		1.65	-10.10	11.75	38.00	460.88		460.37	18.25		2		0.469
3		-3.11	-8.87	5.76	35.41	499.55		498.69	-27.06		3		0.527
4		-4.05	-8.75	4.70	31.86	524.47		522.79	-37.00		4		0.575
5		-3.33	-9.10	5.77	33.21	572.62		570.73	-38.26		5		0.598
6		-2.02	-10.58	8.56	35.96	622.72		620.51	-21.93		6		0.638
7		-2.43	-12.36	9.93	39.89	621.89		618.56	-26.26		7		0.645
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	AXIAL VEL RATIO	DIFFUSION FACTOR	CM1	RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL TANG VEL	EXIT REL TANG VEL	RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO
1		0.448	1.135	0.344	0.269	1		0.386	2.67		1	5.0000	1.003
2		0.469	1.104	0.348	0.248	2		0.397	18.25		2	10.0000	0.995
3		0.527	0.986	0.343	0.294	3		0.438	-27.06		3	30.0000	0.999
4		0.575	0.919	0.335	0.291	4		0.463	-37.00		4	50.0000	0.990
5		0.598	0.988	0.288	0.269	5		0.508	-38.26		5	70.0000	1.001
6		0.638	1.040	0.266	0.214	6		0.553	-21.93		6	90.0000	0.994
7		0.645	1.089	0.290	0.153	7		0.550	-26.26		7	95.0000	0.970
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT TEMP RATIO	LOSS COEFFICIENT	TOT PRESS LOSS PARAM	AD8 EFFICIENCY	POLY MOMEN RTSE/ MEAS Y RISE	STAT PRESS COEFF	STATOR DATA	STATOR DATA	STATOR DATA	STATOR DATA
1	5.0000	1.003	1.000	1.000	0.133	0.044	1.0767	1.0767	0.259	FIXED INST. TRAY, INST.	FIXED INST. TRAY, INST.	FIXED INST. TRAY, INST.	FIXED INST. TRAY, INST.
2	10.0000	0.995	0.994	1.000	0.041	0.013	0.8874	0.8874	0.232	1.2653	0.9909	0.9952	0.9952
3	30.0000	0.999	0.993	1.000	0.049	0.015	0.9842	0.9842	0.280	0.8280	0.9629	1.0899	1.0899
4	50.0000	0.990	0.999	1.000	0.043	0.012	0.8885	0.8885	0.278				
5	70.0000	1.001	0.997	1.000	0.031	0.068	1.0142	1.0142	0.252				
6	90.0000	0.994	0.998	1.000	0.034	0.088	0.9146	0.9146	0.197				
7	95.0000	0.970	0.997	1.000	0.075	0.018	0.5930	0.5930	0.140				
OVERALL PERFORMANCE SUMMARY													
STAGE DATA STATOR DATA STATOR DATA													
FIXED INST. TRAY, INST.													
Total Pressure Ratio = 1.2653													
Polytropic Efficiency = 0.8280													
Percent Design Speed = 70.1													
Cor. Nozzle Weight Flow = 159.64													
Discharge Valve Setting = 14.0													
Vane Schedule = 0/0													
IE Check Flow/Noz.Flow = 1.0252													
Assumed IE Flow Coeff. = 0.9500													
TE Check Flow/Noz.Flow = 0.9999													
Assumed TE Flow Coeff. = 0.9350													

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8°.

INLET GUIDE VANES - NASA TASK 11												
BLADE ELEMENT PERFORMANCE RESULTS												
POINT NUMBER		READING NUMBER		DATE								
20		115		5/19/1970								
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN	INCID ANG LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL	
1		0.90	0.	0.90	0.90		278.90		278.87	4.37		
2		0.42	0.	0.62	0.90		281.09		281.07	3.05		
3		0.16	0.	0.16	0.90		297.98		297.94	0.62		
4		0.97	0.	0.97	0.90		506.65		506.35	0.54		
5		0.23	0.	0.23	0.90		534.11		533.54	2.12		
6		0.25	0.	0.25	0.90		529.54		528.78	2.34		
7		0.19	0.	0.19	0.90		532.13		531.66	4.51		
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL		
1		45.16	40.00	5.16	44.26	517.60		364.98	366.98			
2		44.53	40.00	4.83	44.20	528.90		375.12	372.85			
3		39.76	40.00	0.24	39.92	591.38		454.45	378.15			
4		38.65	40.00	1.35	38.62	710.66		553.96	443.06			
5		43.03	40.00	3.03	42.80	707.47		514.61	480.34			
6		43.04	40.00	3.04	43.30	654.23		471.79	440.60			
7		43.54	40.00	3.64	43.16	571.92		406.15	387.35			
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS COEFFICIENT	TR TL PRESS LOSS PARAM	DIFFUSION CM1					
1		0.251		1.309	0.355	0.094						
2		0.253		1.335	0.199	0.054						
3		0.268		1.525	0.012	-0.003						
4		0.463		1.094	0.121	0.033						
5		0.420		0.965	0.202	0.049						
6		0.485		0.892	0.235	0.052						
7		0.488		0.764	0.510	0.408						
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY	MOMEN RISE/ MEAS T RISE STAT PRESS RISE COEFF							
1		0.474		1.3090								
2		0.455		1.3170								
3		0.545		1.3610								
4		0.654		1.4190								
5		0.660		1.5020								
6		0.607		1.6450								
7		0.526		1.7160								
OVERALL PERFORMANCE SUMMARY												
PERCENT IMMERSION		TRAV TOT PRESS RATIO		FIXED TOT TEMP RATIO		PERFORMANCE PARAMETERS		STAGE DATA		IGV DATA		
1	5.0000	0.996	0.996	0.993	1.000			FIXED INST.		TRAV. INST.		
2	10.0000	0.991	0.997	0.995	1.000	Total Pressure Ratio =		1.3042		0.9796		
3	30.0000	1.001	0.998	0.997	1.000	Polytropic Efficiency =		0.7706		----		
4	50.0000	0.983	1.000	0.983	1.000							
5	70.0000	0.969	1.001	0.974	1.000							
6	90.0000	0.955	1.001	0.965	1.000	Percent Design Speed = 100.0						
7	95.0000	0.923	1.000	0.931	1.000	Cor. Nozzle Weight Flow= 164.86						
						Discharge Valve Setting= 15.0						
						Vane Schedule						
						IE Check Flow/Noz. Flow = 1.0373						
						TE Check Flow/Noz. Flow = 0.9846						
						Assumed IE Flow Coeff. = 0.9900						
						Assumed TE Flow Coeff. = 0.9850						

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Continued).

ROTOR BLADE ROW 2 NASA TASK II														
BLADE ELEMENT PERFORMANCE RESULTS														
POINT NUMBER 20 READING NUMBER 115 DATE 5/19/1970														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL					
1	69.84	42.94	61.28	8.56	545.63	1155.96	398.03	370.37	1084.31					
2	68.58	42.31	60.25	8.33	558.25	1128.91	412.01	375.00	1050.43					
3	60.53	36.43	57.07	3.46	635.57	1039.53	511.36	377.43	905.05					
4	48.44	34.61	53.90	-5.46	764.89	948.20	628.22	433.50	708.49					
5	42.68	38.03	50.80	-8.12	749.92	802.64	585.74	458.11	540.10					
6	38.44	35.33	48.58	-10.14	703.36	733.07	558.34	395.81	443.18					
7	42.82	34.57	46.02	-5.20	615.25	685.91	489.34	337.25	453.52					
RADIAL POSITION	REL EXIT FLOW ANG	ARS EXIT FLOW ANG	CMR LN TE ANGLE	REL DEV ANG TE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL					
1	58.16	51.39	57.52	0.64	807.36	954.55	502.94	629.64	809.97					
2	55.63	49.57	57.18	-1.55	824.65	947.24	534.17	626.88	781.14					
3	47.29	48.44	52.85	-5.56	871.83	852.79	578.35	652.31	626.63					
4	41.57	48.15	46.10	-4.53	861.51	768.36	574.47	641.39	509.47					
5	35.51	49.81	34.70	-0.81	836.55	664.46	538.07	636.93	383.88					
6	16.10	48.53	16.84	-0.74	962.56	670.95	630.93	713.79	182.06					
7	12.84	50.48	10.70	2.14	952.16	638.91	598.93	726.10	136.56					
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	TOT PRESS LOSS	ADB EFFICIENCY	POLY MOMEN RISE/ EFFICIENCY	STAT PRESS RISE COEFF					
1	1454.68	0.501	1.061	1.264	0.141	0.033	0.7819	0.7933	0.241					
2	1425.43	0.513	1.037	1.297	0.146	0.028	0.8284	0.8377	0.243					
3	1282.48	0.588	0.962	1.131	-0.025	-0.005	1.0334	1.0317	0.254					
4	1141.99	0.719	0.892	0.914	0.011	0.002	0.9828	0.9834	0.331					
5	998.21	0.704	0.753	0.919	-0.003	-0.001	1.0032	1.0031	0.476					
6	838.99	0.656	0.682	1.130	-0.140	0.030	0.8688	0.8734	0.281					
7	790.77	0.568	0.634	1.124	-0.116	0.024	1.0968	1.0928	0.185					
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	PERFORMANCE PARAMETERS								
1	1439.81	0.707	0.835	1.4310	1.147	Total Pressure Ratio =								
2	1408.02	0.728	0.836	1.4610	1.145	Adiabatic Efficiency =								
3	1278.95	0.787	0.769	1.6120	1.078	Polytropic Efficiency =								
4	1150.66	0.755	0.700	1.7730	1.085	Percent Design Speed =								
5	1020.81	0.760	0.604	1.9640	1.095	Cor. Nozzle Weight Flow =								
6	895.85	0.895	0.617	2.2480	1.082	Discharge Valve Setting =								
7	862.65	0.873	0.579	2.3470	1.151	Vane Schedule =								
OVERALL PERFORMANCE SUMMARY														
STAGE DATA ROTOR DATA ROTOR DATA														
FIXED INST. FIXED INST. TRAV. INST.														
1	5.0000	1.459	1.152	1.463	1.147	1.3042	1.3731	1.3809						
2	10.0000	1.472	1.138	1.486	1.145	0.7618	0.9162	0.9194						
3	30.0000	1.436	1.107	1.431	1.104	0.7706	0.9199	0.9230						
4	50.0000	1.303	1.084	1.294	1.078									
5	70.0000	1.282	1.084	1.322	1.085									
6	90.0000	1.374	1.098	1.282	1.095									
7	95.0000	1.356	1.099	1.151	1.082									
IE Check Flow/Noz.Flow = 0.9845 TE Check Flow/Noz.Flow = 0.9827														
Assumed IE Flow Coeff. = 0.9850 Assumed TE Flow Coeff. = 0.9500														

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Continued).

STATOR BLADE ROW - NASA TASK 11																
BLADE ELEMENT PERFORMANCE RESULTS																
POINT NUMBER 20 READING NUMBER 115 DATE 5/19/1976																
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CHMR LN LE ANGLE	INCID ANG MN CHMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL						
1		52.96	39.47	13.49		792.50		477.42	632.55							
2		50.52	39.11	11.41		815.13		518.21	629.19							
3		48.31	39.01	9.30		871.34		579.45	650.51							
4		47.32	39.80	7.52		862.94		584.49	638.84							
5		47.63	40.86	6.77		843.91		567.29	621.91							
6		44.95	42.22	2.73		981.60		689.98	688.77							
7		47.05	42.76	4.25		958.97		648.21	694.26							
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CHMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL						
1		2.88	-11.13	14.01	50.07	518.47		517.81	26.07							
2		5.09	-10.10	15.19	45.43	575.48		573.19	51.10							
3		5.53	-8.87	14.50	42.68	555.85		553.03	51.50							
4		4.17	-8.75	12.92	43.15	568.74		566.82	41.33							
5		6.90	-9.10	16.00	40.73	432.60		428.79	51.90							
6		11.75	-10.58	22.33	33.20	286.89		280.08	58.26							
7		12.10	-12.36	24.46	34.94	291.85		284.21	60.95							
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	SOLIDITY COEFFICIENT	LOSS	TOT PRESS LOSS PARAM	ADB EFFICIENCY	POLY MOMEN RISE/ MEAS T RISE	STAT PRESS RISE COEFF						
1		0.692		1.085	1.5230	0.118	0.039		0.6784	0.353						
2		0.719		1.106	1.5440	0.075	0.024		0.8273	0.372						
3		0.786		0.954	1.6310	0.038	0.018		0.7897	0.427						
4		0.787		0.970	1.7420	0.051	0.014		0.9593	0.501						
5		0.768		0.756	1.8800	0.079	0.021		0.7796	0.539						
6		0.905		0.406	2.0510	0.086	0.021		0.6414	0.524						
7		0.880		0.438	2.0980	0.124	0.029		0.6794	0.559						
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	LOSS	FIXED TOT	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO						
1		0.444		0.986	0.967	1.000	0.967	5.0000	0.942	0.942						
2		0.498		0.986	0.978	1.000	0.978	10.0000	0.970	0.970						
3		0.485		0.996	0.980	1.000	0.980	36.0000	0.949	0.949						
4		0.503		0.992	0.983	1.000	0.983	50.0000	0.990	0.990						
5		0.378		0.999	0.975	1.000	0.975	76.0000	0.938	0.938						
6		0.248		0.986	0.962	1.000	0.962	90.0000	0.839	0.839						
7		0.252		0.991	0.949	1.000	0.949	95.0000	0.862	0.862						
OVERALL PERFORMANCE SUMMARY																
STAGE DATA STATOR DATA STATOR DATA																
FIXED INST. FIXED INST. TRAV. INST.																
		Total Pressure Ratio =		1.3042		0.9756		0.9508								
		Polytropic Efficiency =		0.7706		0.9152		0.8784								
		Percent Design Speed =		100.0		Discharge Valve Setting=		15.0								
		Cor. Nozzle Weight Flow=		164.86		Vane Schedule		= 40/8								
		IE Check Flow/Moz.Flow =		0.9827		TE Check Flow/Moz.Flow =		0.9033								
		Assumed IE Flow Coeff. =		0.9500		Assumed TE Flow Coeff. =		0.9350								

OVERALL PERFORMANCE SUMMARY

STAGE DATA			
STATOR DATA			
FIXED INST. FIXED INST. TRAV. INST.			
Total Pressure Ratio =	1.3042	0.9756	0.9508
Polytropic Efficiency =	0.7706	0.9152	0.8784
Percent Design Speed =	100.0	Discharge Valve Setting =	15.0
Cor. Nozzle Weight Flow =	164.86	Vane Schedule	40/8
IE Check Flow/Moz.Flow =	0.9827	TE Check Flow/Moz.Flow =	0.9033
Assumed IE Flow Coeff. =	0.9500	Assumed TE Flow Coeff. =	0.9350

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Continued).

INLET GUIDE VANES - NASA TASK II														
BLADE ELEMENT PERFORMANCE RESULTS														
POINT NUMBER 21 READING NUMBER 116 DATE 5/19/1970														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL				
1		0.55	0.	0.55		203.91		203.90	1.96					
2		0.46	0.	0.46		209.29		209.28	1.68					
3		0.47	0.	0.47		228.80		228.77	1.87					
4		0.88	0.	0.88		375.25		375.04	-5.74					
5		0.98	0.	0.98		414.95		414.45	-7.09					
6		0.37	0.	0.37		390.98		390.40	2.58					
7		0.40	0.	0.40		398.58		398.53	2.79					
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL				
1		42.02	40.00	2.02	41.46	313.54		312.94	209.86					
2		41.43	40.00	1.43	40.97	324.08		324.99	214.43					
3		40.08	40.00	0.08	39.62	387.85		396.66	249.67					
4		38.90	40.00	-1.20	39.68	509.92		396.67	318.93					
5		42.08	40.00	2.08	41.06	502.92		371.38	335.29					
6		42.01	40.00	2.01	41.64	507.79		372.11	335.19					
7		41.75	40.00	1.75	41.35	462.73		338.39	302.01					
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	AXIAL REL INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS COEFFICIENT	IR TL PRESS LOSS PARAM	DIFFUSION FACTOR	MOMEN RISE/STAT PRESS MEAS T RISE RISE COEFF						
1		0.183		1.142	0.342	0.977	0.927	-1.788						
2		0.188		1.161	0.193	0.955	0.935	-1.592						
3		0.206		1.297	0.011	0.903	0.905	-1.690						
4		0.340		1.058	0.062	0.817	0.867	-0.985						
5		0.376		0.896	0.158	0.939	0.492	-0.618						
6		0.363		0.932	0.097	0.922	0.529	-0.783						
7		0.362		0.849	0.355	0.977	0.386	-0.683						
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY	PERFORMANCE PARAMETERS			STAGE DATA						
1		0.283		1.3090	PERCENT IMMERSION	TRAV TOT PRESS RATIO	FIXED INST.	IGV DATA	TRAV. INST.					
2		0.293		1.3170	5.0000	0.996								
3		0.351		1.3610	10.0000	0.997								
4		0.466		1.4190	30.0000	0.998								
5		0.460		1.5020	50.0000	0.996								
6		0.444		1.6460	70.0000	0.988								
7		0.422		1.7160	90.0000	0.992								
OVERALL PERFORMANCE SUMMARY														
					PERFORMANCE PARAMETERS					STAGE DATA				
					FIXED INST.					IGV DATA				
					1.1222					0.9917				
					0.7988					-----				
					Total Pressure Ratio =					Discharge Valve Setting= 30.0				
					Polytropic Efficiency =					Vane Schedule = 40/8				
					Percent Design Speed = 70.0					TE Check Flow/Noz.Flow = 0.9994				
					Cor. Nozzle Weight Flow= 129.27					Assured IE Flow Coeff. = 0.9850				

ROTOR BLADE ROW - NASA TASK II									
BLADE ELEMENT PERFORMANCE RESULTS									
POINT NUMBER 21 READING NUMRER 116 DATE 5/19/1970									
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCD ANG MN CMR LN	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL
1	72.65	40.02	61.28	11.37	330.63	84.28	252.22	211.80	807.30
2	71.31	39.16	60.25	11.06	312.28	826.82	264.79	215.67	782.94
3	63.14	37.16	57.07	6.07	412.56	727.78	328.79	249.19	649.27
4	48.01	35.39	53.90	5.89	539.87	657.45	439.19	312.04	488.00
5	42.56	37.72	50.80	5.24	527.12	565.41	413.43	319.75	379.97
6	33.67	34.97	48.58	-14.91	539.96	533.10	430.45	301.06	286.71
7	35.93	33.21	46.02	-12.09	497.49	512.89	401.60	262.95	291.04
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	REL DEV ANG TE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL
1	55.88	45.74	57.52	1.64	578.89	719.67	403.17	413.72	594.96
2	54.88	43.47	57.18	2.30	574.43	724.27	416.20	394.57	591.84
3	46.90	44.30	52.85	5.95	612.43	643.46	438.29	427.69	468.30
4	39.94	43.93	46.10	6.16	622.09	584.43	447.76	431.31	374.95
5	29.90	44.54	34.70	4.80	646.14	532.23	458.65	451.42	263.73
6	14.51	44.39	16.84	2.33	718.19	535.32	507.09	496.40	131.20
7	13.50	44.73	10.70	2.80	701.21	518.62	491.09	486.45	117.90
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	TOT PRESS LOSS PARAM	AD3 EFFICIENCY	POLY MOMEN RISE/ EFFICIENCY	STAT PRESS RISE COEFF
1	1019.10	0.299	0.754	1.599	0.136	0.027	0.7705	0.7756	0.113
2	998.61	0.309	0.747	1.572	0.090	0.018	0.8466	0.8502	0.119
3	898.47	0.374	0.661	1.333	0.038	0.003	1.0674	1.0659	0.132
4	800.04	0.495	0.603	1.020	0.012	0.003	0.9768	0.9772	0.240
5	699.32	0.483	0.518	1.109	0.027	0.006	1.0379	1.0373	0.213
6	587.77	0.495	0.488	1.178	0.051	0.011	0.9434	0.9445	0.087
7	553.99	0.454	0.469	1.223	0.079	0.016	1.0814	1.0797	0.045
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	PERCENT DISCHARGE
1	1008.69	0.514	0.839	5.0000	1.186	1.070	1.169	1.059	70.0
2	986.41	0.513	0.846	10.0000	1.179	1.060	1.177	1.059	70.0
3	895.99	0.552	0.578	30.0000	1.167	1.047	1.169	1.043	70.0
4	806.26	0.565	0.531	50.0000	1.120	1.035	1.115	1.032	70.0
5	715.15	0.587	0.484	70.0000	1.124	1.037	1.130	1.034	70.0
6	627.60	0.654	0.488	90.0000	1.145	1.049	1.136	1.040	70.0
7	604.35	0.638	0.472	95.0000	1.150	1.046	1.159	1.039	70.0

DIFFUSION CH1

FACTOR

0.232

0.197

0.194

0.163

0.122

0.086

0.095

STAT PRESS

RISE COEFF

0.113

0.119

0.132

0.240

0.213

0.087

0.045

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Continued).

STAYOR BLADE ROW - NASA TASK 18															
BLADE ELEMENT PERFORMANCE RESULTS															
POINT NUMBER 21 READING NUMBER 116 DATE 5/19/1976															
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL					
1		47.24	39.47	7.77		565.97		384.28	419.90						
2		44.35	39.11	5.24		566.52		405.09	398.02						
3		44.18	39.01	5.17		612.18		438.96	428.91						
4		43.17	39.80	3.37		623.58		454.32	428.22						
5		42.49	40.86	1.63		654.30		481.15	445.77						
6		41.27	42.22	-0.95		731.73		545.73	479.00						
7		41.60	42.76	-1.16		709.04		525.37	468.46						
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL					
1		2.85	-11.13	13.98		385.12		384.65	19.13						
2		6.08	-10.10	16.18		428.55		426.13	45.40						
3		7.34	-8.87	16.21		462.72		458.82	59.09						
4		9.17	-8.75	13.92		443.48		441.34	39.96						
5		3.34	-9.10	12.44		494.26		492.63	22.72						
6		11.84	-10.58	22.42		341.34		333.13	69.84						
7		10.31	-12.36	22.67		297.19		291.40	58.02						
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	LOSS	TOT PRESS LOSS PARAM	ABD EFFICIENCY	POLY MOMEN MEAS T WISE	STAT PRESS RISE COEFF						
1		0.502	1.001	0.088		0.089		0.6519	0.332						
2		0.505	1.052	0.033		0.010		0.9147	0.373						
3		0.552	1.045	0.037		0.011		0.9126	0.373						
4		0.566	0.971	0.033		0.089		0.9106	0.429						
5		0.596	1.024	0.030		0.088		0.9837	0.483						
6		0.668	0.610	0.096		0.023		0.6372	0.464						
7		0.646	0.559	0.106		0.025		0.6425	0.497						
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	TRAV TOT TEMP RATIO	PERCENT IMMERSION	TRAV TOT PRESS RATIO	PERCENT IMMERSION	PERCENT IMMERSION	PERCENT IMMERSION	PERCENT IMMERSION					
1		0.339	0.991	0.994	5.0000	0.998	5.0000	5.0000	5.0000	5.0000					
2		0.379	0.994	0.994	10.0000	0.994	10.0000	10.0000	10.0000	10.0000					
3		0.412	0.994	0.994	30.0000	0.992	30.0000	30.0000	30.0000	30.0000					
4		0.397	0.998	0.998	50.0000	0.990	50.0000	50.0000	50.0000	50.0000					
5		0.442	1.003	1.003	70.0000	0.998	70.0000	70.0000	70.0000	70.0000					
6		0.303	0.991	0.991	90.0000	0.918	90.0000	90.0000	90.0000	90.0000					
7		0.263	0.995	0.995	95.0000	0.920	95.0000	95.0000	95.0000	95.0000					
OVERALL PERFORMANCE SUMMARY															
STAGE DATA STATOR DATA STATOR DATA															
FIXED INST. FIXED INST. TRAV. INST.															
		Total Pressure Ratio =		1.1222		0.9901		0.9828							
		Polytropic Efficiency =		0.7988		0.9205		0.9063							
		Percent Design Speed =		70.0		Discharge Valve Setting=		30.0							
		Cor. Nozzle Weight Flow=		129.27		Vane Schedule		= 40/8							
		IE Check Flow/Noz.Flow =		1.0382		TE Check Flow/Noz.Flow =		0.9679							
		Assumed IE Flow Coeff. =		0.9500		Assumed E Flow Coeff. =		0.9350							

OVERALL PERFORMANCE SUMMARY

STAGE DATA		STATOR DATA		STATOR DATA	
FIXED INST. FIXED INST. TRAV. INST.		FIXED INST. FIXED INST. TRAV. INST.		FIXED INST. FIXED INST. TRAV. INST.	
Total Pressure Ratio =		1.1222		0.9901	
Polytropic Efficiency =		0.7988		0.9205	
Percent Design Speed =		70.0		Discharge Valve Settings = 30.0	
Cor. Nozzle Weight Flow =		129.27		Vane Schedule = 40/8	
IE Check Flow/Noz.Flow =		1.0382		TE Check Flow/Noz.Flow = 0.9679	
Assumed IE Flow Coeff. =		0.9500		Assumed TE Flow Coeff. = 0.9350	

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Continued).

INLET GUIDE VANES - NASA TASK II													
BLADE ELEMENT PERFORMANCE RESULTS													
POINT NUMBER		22		READING NUMBER		117		DATE		5/19/1970			
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG MN CMR LN	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL			
1		2.07	0.	2.07		181.32		181.20	6.55				
2		2.02	0.	2.02		193.11		192.98	6.81				
3		0.88	0.	0.88		204.13		204.08	3.12				
4		0.20	0.	0.20		330.68		330.54	3.13				
5		-0.18	0.	-0.18		355.89		355.51	3.11				
6		-0.18	0.	-0.18		345.74		345.25	3.11				
7		0.57	0.	0.57		348.77		348.45	4.08				
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL			
1		45.86	40.00	5.86	943.81	259.70		180.79	186.42				
2		45.41	40.00	5.41	943.39	269.94		189.51	192.23				
3		41.09	40.00	1.09	940.21	344.29		239.42	226.22				
4		37.81	40.00	-2.19	938.00	430.84		355.52	275.85				
5		42.39	40.00	2.39	942.57	444.39		326.54	298.09				
6		42.48	40.00	2.48	942.66	439.57		319.82	292.83				
7		41.49	40.00	1.49	940.82	402.05		295.16	261.04				
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	TRAV LOSS COEFFICIENT	TR TL PRESS LOSS	DIFFUSION FACTOR	MOMEN RISE/ MEAS T RISE				STAT PRESS RISE COEFF	
1		0.162		0.998	0.337	0.090	0.811					91.393	
2		0.173		0.982	0.182	0.649	0.763					91.140	
3		0.183		1.271	0.025	0.007	0.091					91.879	
4		0.298		1.078	0.064	0.018	0.661					90.929	
5		0.322		0.919	0.151	0.037	0.534					90.705	
6		0.312		0.926	0.090	0.020	0.537					90.705	
7		0.315		0.847	0.289	0.053	0.375					90.609	
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	SOLIDITY	OVERALL PERFORMANCE SUMMARY								
1		0.234		1.3090	PERFORMANCE PARAMETERS				STAGE DATA		IGV DATA		
2		0.243		1.3170					FIXED INST.		TRAV. INST.		
3		0.311		1.3610									
4		0.410		1.4190									
5		0.404		1.5020									
6		0.400		1.6460									
7		0.365		1.7160									
RADIAL POSITION	PERCENT INVERSION	PRESS RATIO	TRAV TOT PRESS RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	FIXED TOT							
1	5.0000	0.994	0.995	0.995	0.997	1.000							
2	10.0000	0.996	0.996	0.996	0.998	1.000							
3	30.0000	0.999	0.996	0.996	0.999	1.000							
4	50.0000	0.996	0.997	0.997	0.997	1.000							
5	70.0000	0.990	0.990	0.992	0.992	1.000							
6	90.0000	0.994	0.998	0.998	0.995	1.000							
7	95.0000	0.981	0.998	0.995	0.995	1.000							
							Total Pressure Ratio = 1.2000					0.9940	
							Polytropic Efficiency = 0.8018					0.9517	
							Percent Design Speed = 70.0					Discharge Valve Setting = 6.5	
							Cor. Nozzle Weight Flow = 113.13					Vane Schedule = 4/8	
							LE Check Flow/Noz.Flow = 1.0824					TE Check Flow/Noz.Flow = 1.0125	
							Assumed LE Flow Coeff. = 0.9900					Assumed TE Flow Coeff. = 0.9850	

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Continued).

ROTOR BLADE ROW - NASA TASK II														
BLADE ELEMENT PERFORMANCE RESULTS														
POINT NUMBER 22 READING NUMBER 117 DATE 5/19/1970														
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	CMR LN MA CMR LN	INCID ANG	REL DEV ANG TE	REL TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL
1	76.77	43.91	61.28	15.49	15.49	1.01	28.26	272.20	854.49	195.42	188.14	831.94	289.20	572.16
2	75.65	43.17	60.25	15.40	15.40	1.01	28.33	283.17	831.97	206.12	193.35	805.84	343.80	541.66
3	66.92	38.20	52.07	9.85	9.85	1.01	22.21	365.09	733.78	286.90	225.78	673.20	413.00	487.73
4	53.53	34.53	53.90	20.37	20.37	1.01	13.26	477.11	608.55	392.20	269.90	538.60	377.46	486.97
5	48.93	38.14	50.80	31.97	31.97	1.01	17.98	464.71	554.32	362.05	284.27	413.65	445.82	380.12
6	41.52	35.61	48.56	27.96	27.96	1.01	23.54	484.11	501.89	367.20	263.03	325.08	418.99	494.58
7	43.23	33.15	48.02	24.79	24.79	1.01	26.64	430.72	498.73	347.93	227.27	327.03	443.14	481.39
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	CMR LN MA CMR LN	INCID ANG	REL DEV ANG TE	REL TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL
1	56.51	63.19	57.92	15.49	15.49	1.01	28.26	641.66	524.79	289.20	572.16	437.10	572.16	437.10
2	52.32	57.59	57.18	15.40	15.40	1.01	28.33	642.16	563.27	343.80	541.66	445.31	541.66	445.31
3	44.71	49.74	52.85	9.85	9.85	1.01	22.21	639.14	581.13	413.00	487.73	408.77	487.73	408.77
4	40.27	52.22	46.10	20.37	20.37	1.01	13.26	616.41	495.03	377.46	486.97	319.74	486.97	319.74
5	30.95	52.06	34.70	31.97	31.97	1.01	17.98	620.12	445.82	380.12	487.60	227.95	487.60	227.95
6	17.98	50.27	16.84	27.96	27.96	1.01	23.54	649.28	443.30	418.99	494.58	133.38	494.58	133.38
7	16.59	49.31	16.70	24.79	24.79	1.01	26.64	642.58	443.14	413.88	481.39	123.30	481.39	123.30
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	INLET REL MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	LOSS PANAM	TOY PRESS	ADP EFFICIENCY	POLY WOMEN RISE/	STAT PRESS RISE COEFF	DIFFUSION FACTOR	CM1		
1	1019.68	0.245	0.770	1.480	0.226	0.044	0.7619	0.7705	0.8360	0.232	0.541	0.288		
2	999.18	0.255	0.750	1.668	0.157	0.033	0.8299	0.8299	0.8360	0.231	0.464	0.291		
3	898.98	0.330	0.662	1.440	-0.015	-0.003	1.0183	1.0183	0.8360	0.231	0.316	0.301		
4	800.50	0.435	0.602	0.962	0.009	0.002	0.9890	0.9890	0.8360	0.232	0.345	0.396		
5	699.72	0.423	0.505	1.050	-0.011	-0.002	1.8102	1.8102	0.8360	0.232	0.293	0.442		
6	588.11	0.423	0.457	1.119	0.024	0.047	0.8287	0.8287	0.8360	0.234	0.234	0.318		
7	554.30	0.391	0.446	1.190	0.023	0.005	0.9835	0.9835	0.8360	0.221	0.221	0.251		
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	EXIT REL MACH NO	AXIAL VEL RATIO	LOSS COEFFICIENT	LOSS PANAM	TOY PRESS	ADP EFFICIENCY	POLY WOMEN RISE/	STAT PRESS RISE COEFF	DIFFUSION FACTOR	CM1		
1	1009.26	0.559	0.457	1.4310	0.226	0.044	0.7619	0.7705	0.8360	0.232	0.541	0.288		
2	986.97	0.562	0.493	1.4610	0.157	0.033	0.8299	0.8299	0.8360	0.231	0.464	0.291		
3	896.50	0.571	0.519	1.6120	-0.015	-0.003	1.0183	1.0183	0.8360	0.231	0.316	0.301		
4	806.72	0.553	0.444	1.7730	0.009	0.002	0.9890	0.9890	0.8360	0.232	0.345	0.396		
5	715.55	0.557	0.401	1.9640	-0.011	-0.002	1.8102	1.8102	0.8360	0.232	0.293	0.442		
6	627.96	0.585	0.397	2.2480	0.024	0.047	0.8287	0.8287	0.8360	0.234	0.234	0.318		
7	604.69	0.578	0.399	2.3470	0.023	0.005	0.9835	0.9835	0.8360	0.221	0.221	0.251		
OVERALL PERFORMANCE SUMMARY														
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	TRAV TOT TEMP RATIO	FIXED TOT PRESS RATIO	FIXED TOT TEMP RATIO	PERFORMANCE PARAMETERS	STAGE DATA	ROTOR DATA	ROTOR DATA	ROTOR DATA	ROTOR DATA	ROTOR DATA	ROTOR DATA	ROTOR DATA
1	5.0000	1.318	1.122	1.295	1.101	Total Pressure Ratio =	1.2000	1.2270	1.2376	1.2376	1.2376	1.2376	1.2376	1.2376
2	10.0000	1.309	1.112	1.295	1.093	Adiabatic Efficiency =	0.7965	0.8965	0.8773	0.8773	0.8773	0.8773	0.8773	0.8773
3	30.0000	1.264	1.070	1.255	1.056	Polytropic Efficiency =	0.8018	0.8995	0.8810	0.8810	0.8810	0.8810	0.8810	0.8810
4	50.0000	1.200	1.058	1.188	1.051	Percent Design Speed =	70.0	Discharge Valve Setting =	6.5	6.5	6.5	6.5	6.5	6.5
5	70.0000	1.196	1.054	1.159	1.050	Cor. Nozzle Weight Flow =	113.13	Vane Schedule	40/8	40/8	40/8	40/8	40/8	40/8
6	90.0000	1.200	1.057	1.158	1.052	IE Check Flow/Moz.Flow =	1.0123	TE Check Flow/Moz.Flow =	1.0684	1.0684	1.0684	1.0684	1.0684	1.0684
7	95.0000	1.208	1.057	1.158	1.052	Assumed IE Flow Coeff. =	0.9850	Assumed TE Flow Coeff. =	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500

Table VII. Radial Distortion Data with IGV/Stator Schedule 40°/8° (Concluded).

STATOR BLADE ROW - NASA TASK 11												
BLADE ELEMENT PERFORMANCE RESULTS												
5/19/1970												
POINT NUMBER 22 READING NUMBER 117 DATE												
RADIAL POSITION	REL INLET FLOW ANG	ABS INLET FLOW ANG	CMR LN LE ANGLE	INCID ANG	INCID ANG SUCT SURF	INLET ABS VELOCITY	INLET REL VELOCITY	INLET AX VELOCITY	INLET ABS TANG VEL	INLET REL TANG VEL		
1		64.30	39.47	24.83		637.71		276.56	574.82			
2		58.35	39.11	19.24		638.68		335.18	548.46			
3		49.62	39.01	10.61		638.60		43.62	488.38			
4		51.51	39.80	11.71		615.30		382.69	481.24			
5		50.14	40.86	9.28		621.68		397.54	479.10			
6		47.36	42.22	5.14		652.85		439.50	479.25			
7		44.32	42.76	3.56		643.28		440.79	468.61			
RADIAL POSITION	REL EXIT FLOW ANG	ABS EXIT FLOW ANG	CMR LN TE ANGLE	DEV ANG TE	TURN ANGLE	EXIT ABS VELOCITY	EXIT REL VELOCITY	EXIT AX VELOCITY	EXIT ABS TANG VEL	EXIT REL TANG VEL		
1		-2.94	-11.13	8.19	67.24	344.80	344.34	344.34	-17.70	-17.70		
2		-1.07	-10.10	9.03	59.41	344.16	344.09	344.09	-6.41	-6.41		
3		2.50	-8.87	11.37	47.12	365.10	364.66	364.66	19.93	19.93		
4		5.27	-8.75	14.02	46.24	291.33	289.89	289.89	26.74	26.74		
5		5.41	-9.10	14.51	44.73	305.59	303.75	303.75	28.74	28.74		
6		16.53	-10.58	27.11	30.83	254.63	243.45	243.45	78.85	78.85		
7		18.04	-12.36	30.40	28.29	227.08	213.24	213.24	78.08	78.08		
RADIAL POSITION	ROTOR SPD AT INLET	INLET ABS MACH NO	AXIAL VEL RATIO	DIFFUSION FACTOR	CHI							
1		0.556	1.245	0.764	0.338							
2		0.559	1.027	0.740	0.355							
3		0.570	0.882	0.683	0.486							
4		0.592	0.758	0.737	0.591							
5		0.559	0.764	0.658	0.503							
6		0.588	0.554	0.797	0.971							
7		0.579	0.488	0.788	0.909							
RADIAL POSITION	ROTOR SPD AT EXIT	EXIT ABS MACH NO	SOLIDITY	LOSS COEFFICIENT	LOSS PARAM	ADP EFFICIENCY	POLY WOMEN RESE/ MEAS T RISE	STAY PRESS RISE COEFF				
1		0.297	1.520	0.119	0.039	0.473	0.473	0.319				
2		0.298	1.546	0.121	0.039	0.501	0.501	0.337				
3		0.320	1.631	0.058	0.018	0.790	0.790	0.487				
4		0.296	1.742	0.045	0.013	0.736	0.736	0.939				
5		0.269	1.880	0.069	0.018	0.742	0.742	0.949				
6		0.223	2.051	0.083	0.019	0.673	0.673	0.956				
7		0.199	2.098	0.105	0.024	0.698	0.698	0.979				
OVERALL PERFORMANCE SUMMARY												
RADIAL POSITION	PERCENT IMMERSION	TRAV TOT PRESS RATIO	FIXED TOT PRESS RATIO	TEMP RATIO	FIXED TOT TEMP RATIO	STAGE DATA STATOR DATA STATOR DATA						
1	5.0000	0.925	0.977	1.000	1.000	FIXED INST. FIXED INST. TRAV. INST.						
2	16.0000	0.929	0.980	1.000	1.000	Total Pressure Ratio = 1.2000 0.9845 0.9489						
3	30.0000	0.960	0.996	1.000	1.000	Polytropic Efficiency = 0.8018 0.9217 0.7771						
4	50.0000	0.956	0.991	1.000	1.000	Percent Design Speed = 70.0 Discharge Valve Setting= 6.5						
5	70.0000	0.964	0.998	1.000	1.000	Cor. Nozzle Weight Flow= 113.13 Vane Schedule = 40/8						
6	90.0000	0.939	0.992	1.000	1.000	IE Check Flow/Noz.Flow = 1.0684 TE Check Flow/Noz.Flow = 0.8688						
7	95.0000	0.940	0.978	1.000	1.000	Assumed IE Flow Coeff. = 0.9500 Assumed TE Flow Coeff. = 0.9350						

APPENDIX C - LISTING OF CIRCUMFERENTIAL DISTORTION FLOW SURVEY DATA

Circumferential distortion flow survey data for the Task II stage are presented at 70 and 100% design speed for both IGV/stator schedules tested. Operating conditions at each IGV/stator schedule included maximum flow, intermediate flow and near stall. Flow survey data at the $0^\circ/0^\circ$ (nominal) IGV/stator schedule for the above operating conditions are listed in Tables VIII, IX and X, respectively. The $40^\circ/8^\circ$ IGV/stator schedule data are found in Tables XI, XII and XIII.

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0°.

PLANE NO. = 0.18 IMMERISION NO. = 1		RADIUS = 17.415		SLOPE = -1.29			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	13.75	11.40	518.69	-8.63	570.08	563.62	0.524
15.00	13.67	11.40	518.69	-8.18	562.53	556.81	0.517
30.00	13.73	11.39	518.69	-7.77	570.16	564.92	0.524
45.00	13.65	11.38	518.69	-7.37	562.27	557.63	0.517
60.00	13.74	11.29	518.69	-6.90	583.54	579.31	0.537
75.00	13.68	11.20	518.69	-6.44	588.04	584.33	0.542
90.00	13.94	11.10	518.69	-5.46	626.63	623.79	0.580
105.00	13.75	11.00	518.69	-4.48	620.23	618.33	0.573
120.00	13.65	10.66	518.69	-2.84	652.05	651.25	0.605
135.00	12.91	10.33	518.69	-1.21	621.05	620.91	0.574
150.00	11.60	10.36	518.69	-4.34	444.22	442.94	0.404
165.00	11.62	10.40	518.69	-7.47	440.06	436.32	0.400
180.00	11.72	10.34	518.69	-8.69	467.78	462.41	0.426
195.00	11.66	10.29	518.69	-9.91	468.33	461.34	0.427
210.00	11.65	10.36	518.69	-11.16	452.29	443.74	0.412
225.00	11.56	10.44	518.69	-12.41	422.69	412.82	0.384
240.00	13.70	10.61	518.69	-12.28	662.31	647.13	0.615
255.00	13.74	10.78	518.69	-12.16	645.55	631.07	0.598
270.00	13.73	10.96	518.69	-11.71	623.50	610.51	0.577
285.00	13.72	11.13	518.69	-11.27	601.32	589.73	0.555
300.00	13.72	11.20	518.69	-10.76	592.45	582.03	0.546
315.00	13.64	11.27	518.69	-10.26	574.89	565.70	0.529
330.00	13.73	11.33	518.69	-9.68	576.82	568.62	0.531
345.00	13.58	11.40	518.69	-9.09	552.29	545.35	0.507
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
0.	1431.37	-85.58	1516.95	69.62	1618.27	1.488	1.66
15.00	1431.37	-80.01	1511.38	69.78	1610.69	1.480	1.64
30.00	1431.37	-77.12	1508.49	69.47	1610.81	1.481	1.67
45.00	1431.37	-72.14	1503.51	69.45	1603.58	1.474	1.64
60.00	1431.37	-70.16	1501.53	68.90	1609.40	1.482	1.70
75.00	1431.37	-65.05	1497.32	68.68	1607.50	1.481	1.70
90.00	1431.37	-59.63	1491.00	67.30	1616.23	1.495	1.81
105.00	1431.37	-46.47	1479.84	67.32	1603.83	1.483	1.78
120.00	1431.37	-32.36	1463.74	66.01	1602.08	1.486	1.83
135.00	1431.37	-33.09	1444.46	66.74	1572.26	1.454	1.86
150.00	1431.37	-33.62	1464.99	73.18	1530.49	1.393	1.16
165.00	1431.37	-57.23	1488.60	73.66	1551.23	1.411	1.15
180.00	1431.37	-70.69	1502.06	72.89	1571.63	1.433	1.22
195.00	1431.37	-80.60	1511.97	73.03	1580.79	1.441	1.21
210.00	1431.37	-87.52	1518.90	73.71	1582.39	1.441	1.17
225.00	1431.37	-90.81	1522.18	74.83	1577.17	1.433	1.19
240.00	1431.37	-140.89	1572.26	67.63	1700.24	1.579	1.81
255.00	1431.37	-125.96	1567.33	68.07	1689.61	1.566	1.79
270.00	1431.37	-126.57	1557.94	68.60	1673.29	1.547	1.75
285.00	1431.37	-117.49	1548.86	69.16	1657.33	1.529	1.71
300.00	1431.37	-110.65	1542.02	69.32	1648.21	1.519	1.70
315.00	1431.37	-102.42	1533.79	69.75	1634.78	1.504	1.65
330.00	1431.37	-96.96	1528.33	69.59	1630.68	1.501	1.67
345.00	1431.37	-87.26	1515.63	70.25	1613.59	1.482	1.60

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.18		RADIUS = 13,300		SLOPE = -1.08			
IMMERSED NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	13.74	10.97	518.69	-8.00	623.13	617.07	0.576
15.00	13.76	10.99	518.69	-7.55	623.07	617.68	0.576
30.00	13.77	10.96	518.69	-6.78	627.53	623.15	0.581
45.00	13.69	10.93	518.69	-6.01	623.57	620.15	0.577
60.00	13.78	10.85	518.69	-4.95	640.71	638.32	0.594
75.00	13.69	10.78	518.69	-3.89	640.69	639.22	0.594
90.00	13.82	10.63	518.69	-2.75	671.84	671.05	0.625
105.00	13.70	10.47	518.69	-1.62	679.00	678.73	0.632
120.00	13.66	10.37	518.69	0.27	687.41	687.40	0.640
135.00	12.21	10.26	518.69	2.16	549.80	549.41	0.505
150.00	11.41	10.25	518.69	-1.30	433.86	433.75	0.394
165.00	11.38	10.24	518.69	-4.76	430.56	427.07	0.391
180.00	11.46	10.21	518.69	-7.40	450.25	446.49	0.410
195.00	11.40	10.18	518.69	-10.05	445.10	438.27	0.405
210.00	11.46	10.26	518.69	-11.97	441.14	431.54	0.401
225.00	11.39	10.34	518.69	-13.89	412.39	400.32	0.374
240.00	13.64	10.33	518.69	-13.64	690.45	670.97	0.643
255.00	13.66	10.32	518.69	-13.39	692.98	674.14	0.646
270.00	13.82	10.50	518.69	-12.35	685.51	669.65	0.638
285.00	13.72	10.69	518.69	-11.31	655.13	642.41	0.606
300.00	13.74	10.78	518.69	-10.67	645.67	634.50	0.599
315.00	13.75	10.87	518.69	-10.04	636.01	626.27	0.589
330.00	13.73	10.91	518.69	-9.24	629.27	621.10	0.582
345.00	13.70	10.95	518.69	-8.45	621.16	614.43	0.574

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL FLOW MT.
0.	1093.15	-86.68	1179.83	62.39	1331.46	1.231	1.95
15.00	1093.15	-81.81	1174.96	62.27	1327.43	1.227	1.96
30.00	1093.15	-74.06	1167.21	61.90	1323.14	1.224	1.97
45.00	1093.15	-65.29	1158.44	61.84	1313.99	1.215	1.95
60.00	1093.15	-55.28	1148.44	60.93	1313.91	1.217	2.01
75.00	1093.15	-43.47	1136.62	60.65	1304.03	1.208	2.00
90.00	1093.15	-32.28	1125.43	59.19	1310.31	1.218	2.08
105.00	1093.15	-19.17	1112.32	58.61	1303.05	1.212	2.07
120.00	1093.15	3.24	1089.91	57.76	1288.58	1.200	2.08
135.00	1093.15	20.70	1072.45	62.87	1204.99	1.106	1.60
150.00	1093.15	-9.85	1103.00	68.53	1185.22	1.078	1.24
165.00	1093.15	-35.72	1128.87	69.19	1207.67	1.098	1.22
180.00	1093.15	-58.02	1151.17	68.80	1234.73	1.124	1.27
195.00	1093.15	-77.67	1170.82	69.48	1250.16	1.138	1.24
210.00	1093.15	-91.51	1184.66	69.98	1260.81	1.147	1.24
225.00	1093.15	-99.03	1192.18	71.44	1257.60	1.142	1.15
240.00	1093.15	-162.88	1256.03	61.89	1424.01	1.327	1.03
255.00	1093.15	-160.53	1253.68	61.73	1423.44	1.327	2.04
270.00	1093.15	-146.63	1239.78	61.62	1409.07	1.312	2.06
285.00	1093.15	-128.45	1221.60	62.26	1380.22	1.281	1.99
300.00	1093.15	-119.59	1212.74	62.38	1368.70	1.269	1.98
315.00	1093.15	-110.88	1204.03	62.52	1357.17	1.257	1.97
330.00	1093.15	-101.08	1194.23	62.52	1346.09	1.246	1.96
345.00	1093.15	-91.25	1184.40	62.58	1334.29	1.234	1.94

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = U.10		IMMERSION NO. = 5		RADIUS = 8.580		SLOPE = -0.33			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.		
0.	13.75	10.94	518.69	7.29	628.13	623.05	0.581		
15.00	13.73	10.96	518.69	-6.05	624.38	620.90	0.577		
30.00	13.79	10.95	518.69	-5.07	631.16	628.70	0.584		
45.00	13.80	10.94	518.69	-4.08	633.10	631.49	0.586		
60.00	13.73	10.91	518.69	-2.63	640.99	640.31	0.594		
75.00	13.66	10.89	518.69	-1.18	649.03	648.90	0.602		
90.00	13.86	10.56	518.69	0.38	682.00	681.98	0.635		
105.00	13.78	10.44	518.69	1.93	689.40	689.01	0.642		
120.00	13.73	10.32	518.69	4.74	698.59	696.20	0.652		
135.00	12.80	10.21	518.69	7.55	625.24	619.82	0.578		
150.00	11.41	10.25	518.69	2.63	432.94	432.48	0.394		
165.00	11.35	10.30	518.69	-2.28	413.89	413.57	0.376		
180.00	11.41	10.29	518.69	-5.95	425.43	423.13	0.387		
195.00	11.46	10.28	518.69	-9.63	436.34	430.19	0.397		
210.00	11.59	10.31	518.69	-13.74	452.74	439.78	0.412		
225.00	11.49	10.34	518.69	-17.85	429.65	408.96	0.391		
240.00	13.67	10.35	518.69	-16.84	690.76	661.13	0.644		
255.00	13.74	10.35	518.69	-15.83	696.04	669.65	0.649		
270.00	13.82	10.49	518.69	-14.59	687.13	664.97	0.640		
285.00	13.76	10.63	518.69	-13.35	666.23	648.23	0.619		
300.00	13.73	10.75	518.69	-12.37	649.13	634.06	0.602		
315.00	13.74	10.86	518.69	-11.39	636.44	623.90	0.589		
330.00	13.73	10.89	518.69	-9.97	631.19	621.67	0.584		
345.00	13.75	10.92	518.69	-8.54	629.60	622.62	0.583		
								REL. FLOW ANGLE	REL. VELOCITY
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW		
0.	705.21	-79.75	784.95	51.56	1002.17	0.927	1.21		
15.00	705.21	-65.83	771.04	51.16	989.96	0.916	1.21		
30.00	705.21	-55.75	760.96	50.44	987.07	0.914	1.22		
45.00	705.21	-45.08	750.28	49.91	980.67	0.908	1.23		
60.00	705.21	-29.42	734.63	48.92	974.52	0.903	1.23		
75.00	705.21	-13.35	718.56	47.92	968.19	0.898	1.24		
90.00	705.21	4.48	700.72	45.78	977.81	0.910	1.30		
105.00	705.21	23.24	681.96	44.71	969.44	0.903	1.30		
120.00	705.21	57.72	647.49	42.92	950.76	0.887	1.30		
135.00	705.21	82.11	623.10	45.15	878.88	0.813	1.12		
150.00	705.21	19.69	585.32	57.75	810.37	0.737	0.76		
165.00	705.21	-16.47	721.67	60.18	831.77	0.755	0.73		
180.00	705.21	-44.13	749.34	60.55	860.55	0.782	0.75		
195.00	705.21	-72.98	778.18	61.07	889.18	0.809	0.76		
210.00	705.21	-107.54	812.75	61.58	924.10	0.841	0.78		
225.00	705.21	-131.73	836.93	63.96	931.51	0.847	0.73		
240.00	705.21	-200.12	903.33	53.86	1121.04	1.045	1.23		
255.00	705.21	-189.85	895.05	53.20	1117.84	1.042	1.25		
270.00	705.21	-173.07	878.28	52.87	1101.62	1.026	1.26		
285.00	705.21	-153.82	859.03	52.96	1076.16	1.000	1.23		
300.00	705.21	-139.08	844.28	53.09	1055.86	0.979	1.22		
315.00	705.21	-125.73	830.94	53.10	1039.09	0.962	1.21		
330.00	705.21	-109.23	814.43	52.65	1024.58	0.948	1.20		
345.00	705.21	-93.45	798.66	52.06	1012.68	0.937	1.21		

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95 IMMERSION NO. = 1		RADIUS = 17.420		SLOPE = -1.91			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
27.98	13.41	10.57	518.69	0.38	639.20	639.19	0.592
57.98	13.52	10.46	518.69	0.34	664.06	664.05	0.617
87.98	13.44	10.57	518.69	0.39	643.06	643.05	0.596
117.98	13.32	10.40	518.69	1.23	652.06	651.91	0.605
147.98	11.50	9.76	518.69	6.10	506.93	506.73	0.521
177.98	11.49	8.99	518.69	1.31	648.51	648.44	0.601
207.98	11.47	8.99	518.69	1.37	646.57	646.39	0.599
237.98	13.45	10.04	518.69	3.94	706.00	704.33	0.659
267.98	13.43	10.44	518.69	1.46	658.35	658.13	0.611
297.98	13.43	10.54	518.69	0.86	643.83	643.76	0.599
327.98	13.46	10.54	518.69	0.19	648.20	648.19	0.601
357.98	13.54	10.54	518.69	0.34	656.32	656.31	0.609
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH FLOW
27.98	1431.78	4.19	1427.59	65.88	1564.15	1.449	3.20
57.98	1431.78	-3.92	1435.70	65.18	1581.83	1.469	3.31
87.98	1431.78	4.32	1427.46	65.75	1565.62	1.451	3.22
117.98	1431.78	14.01	1417.77	65.31	1563.47	1.448	3.22
147.98	1431.78	60.20	1371.59	67.66	1482.92	1.363	2.51
177.98	1431.76	14.88	1416.90	65.41	1558.23	1.445	2.77
207.98	1431.78	-15.42	1447.21	65.93	1565.00	1.469	2.76
237.98	1431.78	-48.50	1480.28	64.55	1439.30	1.530	3.40
267.98	1431.78	-16.82	1449.60	65.57	1591.10	1.477	3.27
297.98	1431.78	-9.93	1441.71	65.87	1573.73	1.464	3.23
327.98	1431.78	-2.13	1433.91	65.67	1573.61	1.459	3.24
357.98	1431.78	-3.88	1435.67	65.43	1578.57	1.465	3.29

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95		RADIUS = 13.797		SLOPE = 4.85			
IMMERSION NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
27.98	13.69	9.75	518.69	0.69	757.01	756.96	0.712
57.98	13.69	9.75	518.69	0.90	756.55	756.46	0.711
87.98	13.70	9.75	518.69	0.89	756.93	756.84	0.712
117.98	13.67	9.72	518.69	3.20	758.55	757.37	0.713
147.98	11.42	8.83	518.69	10.30	663.07	652.39	0.616
177.98	11.45	8.33	518.69	0.60	733.83	733.79	0.688
207.98	11.42	8.23	518.69	1.31	743.45	743.26	0.698
237.98	13.67	9.34	518.69	1.97	798.94	795.93	0.755
267.98	13.79	9.68	518.69	1.44	771.38	771.14	0.727
297.98	13.70	9.73	518.69	0.03	759.79	759.79	0.714
327.98	13.70	9.74	518.69	0.19	758.14	758.14	0.713
357.98	13.70	9.76	518.69	0.34	756.37	756.36	0.711
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
27.98	1134.00	9.13	1124.87	56.06	1355.85	1.275	3.85
57.98	1134.00	11.83	1122.17	56.02	1353.33	1.272	3.85
87.98	1134.00	11.60	1122.20	56.00	1353.57	1.272	3.86
117.98	1134.00	42.32	1091.68	55.25	1328.68	1.249	3.85
147.98	1134.00	118.52	1015.48	57.28	1206.98	1.121	3.94
177.98	1134.00	7.66	1126.34	56.92	1344.28	1.260	3.17
207.98	1134.00	-17.05	1191.05	57.15	1370.16	1.286	3.19
237.98	1134.00	-69.19	1203.19	56.51	1442.63	1.364	3.93
267.98	1134.00	-19.37	1153.37	56.23	1387.41	1.307	3.91
297.98	1134.00	-0.41	1134.41	56.19	1365.35	1.284	3.86
327.98	1134.00	2.51	1131.49	56.18	1362.00	1.280	3.86
357.98	1134.00	4.31	1129.49	56.19	1359.35	1.278	3.85

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. IMMERSION NO.	0.95 5	RADIUS	9.910	SLOPE	15.45					
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.			
27.98	13.75	9.85	518.69	1.53	726.39	726.13	0.682			
57.98	13.71	9.85	518.69	1.33	722.59	722.39	0.678			
87.98	13.72	9.83	518.69	0.22	725.23	725.23	0.681			
117.98	13.73	9.76	518.69	3.80	731.49	729.88	0.688			
147.98	11.78	9.22	518.69	17.38	627.89	599.22	0.582			
177.98	11.41	8.28	518.69	2.93	711.86	710.93	0.667			
207.98	11.54	8.28	518.69	6.15	723.73	719.56	0.679			
237.98	13.62	9.46	518.69	8.03	757.72	750.29	0.715			
267.98	13.71	9.74	518.69	4.13	734.71	732.80	0.691			
297.98	13.65	9.78	518.69	2.17	725.94	725.42	0.682			
327.98	13.70	9.81	518.69	1.91	725.80	725.39	0.682			
357.98	13.68	9.83	518.69	1.80	722.94	722.58	0.679			
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.			
27.98	814.52	-19.38	933.90	48.95	1105.74	1.039	2.44			
57.98	814.52	-16.77	931.29	49.01	1101.32	1.034	2.43			
87.98	814.52	-2.84	917.36	48.42	1092.71	1.026	2.43			
117.98	814.52	48.50	766.02	46.38	1058.07	0.994	2.44			
147.98	814.52	187.58	526.95	46.30	867.25	0.804	1.84			
177.98	814.52	36.33	778.20	47.59	1054.05	0.988	2.00			
207.98	814.52	-77.58	992.11	51.11	1146.13	1.076	2.03			
237.98	814.52	105.83	920.36	50.81	1187.43	1.120	2.44			
267.98	814.52	-52.93	867.45	49.81	1135.54	1.068	2.44			
297.98	814.52	-27.54	942.06	49.26	1111.44	1.044	2.42			
327.98	814.52	-24.19	938.71	49.14	1108.89	1.041	2.43			
357.98	814.52	-22.67	937.19	49.20	1105.90	1.038	2.42			

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51 IMMERSION NO. = 1		RADIUS = 17.081		SLOPE = -0.83			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	18.77	13.73	590.96	22.88	772.91	712.11	0.684
45.00	18.86	13.90	593.52	23.23	773.63	710.91	0.683
75.00	18.91	13.79	593.93	23.02	778.20	716.23	0.687
105.00	18.64	13.60	591.11	24.02	775.65	708.50	0.686
135.00	17.53	12.92	573.98	28.10	758.62	669.21	0.675
165.00	18.17	13.27	605.14	31.28	790.36	675.45	0.685
195.00	18.03	13.37	606.42	31.40	772.98	699.76	0.688
225.00	19.88	14.60	620.90	25.04	793.76	719.17	0.672
255.00	19.03	14.21	594.20	22.08	749.98	694.97	0.660
285.00	18.87	13.84	592.17	22.33	770.01	712.26	0.680
315.00	18.76	13.75	592.57	22.43	771.53	713.15	0.681
345.00	18.82	13.78	592.68	23.00	772.99	711.53	0.683
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
15.00	1403.92	300.50	1103.42	57.16	1313.25	1.162	3.46
45.00	1403.92	305.14	1098.78	57.10	1308.71	1.155	3.46
75.00	1403.92	304.30	1099.62	56.92	1312.31	1.159	3.48
105.00	1403.92	315.70	1088.22	56.93	1298.54	1.149	3.41
135.00	1403.92	357.31	1046.61	57.40	1242.27	1.105	3.09
165.00	1403.92	410.42	993.50	55.79	1201.36	1.042	3.05
195.00	1403.92	402.75	1001.17	56.62	1199.01	1.036	2.98
225.00	1403.92	335.92	1068.00	56.04	1287.57	1.101	3.48
255.00	1403.92	281.94	1121.98	58.23	1319.78	1.161	3.46
285.00	1403.92	292.58	1111.34	57.34	1319.99	1.166	3.48
315.00	1403.92	294.41	1109.51	57.27	1318.94	1.165	3.46
345.00	1403.92	302.04	1101.88	57.15	1311.64	1.159	3.46

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51 IMMERSION NO. = 3		RADIUS = 14.056		SLOPE = 3.14			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	19.84	13.91	587.86	28.70	824.57	723.27	0.730
45.00	19.86	13.91	588.50	29.11	826.37	721.98	0.731
75.00	19.85	13.92	588.63	29.05	824.71	720.97	0.729
105.00	19.66	13.68	588.79	29.54	830.98	722.98	0.737
135.00	18.62	12.91	579.39	33.07	830.64	696.09	0.742
165.00	17.59	12.59	597.40	38.06	807.94	636.12	0.707
195.00	18.09	12.74	603.53	35.06	830.52	679.83	0.725
225.00	20.17	14.20	621.14	31.72	843.32	717.35	0.726
255.00	20.06	14.29	596.02	30.49	812.24	699.09	0.712
285.00	19.72	13.90	597.07	27.72	818.38	724.48	0.724
315.00	19.78	13.94	587.98	28.46	819.32	720.28	0.724
345.00	19.84	13.94	587.95	28.55	822.62	722.62	0.728
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
15.00	1155.29	395.96	759.32	46.39	1048.67	0.928	3.95
45.00	1155.29	402.03	753.26	46.21	1043.38	0.923	3.94
75.00	1155.29	400.43	754.86	46.32	1043.84	0.923	3.94
105.00	1155.29	409.66	745.63	45.88	1038.59	0.922	3.91
135.00	1155.29	453.25	702.04	45.24	989.63	0.863	3.59
165.00	1155.29	498.11	657.17	45.93	914.61	0.806	3.08
195.00	1155.29	477.07	679.22	44.93	960.29	0.838	3.31
225.00	1155.29	443.39	711.90	44.78	1010.64	0.876	3.78
255.00	1155.29	412.07	743.21	46.72	1020.93	0.895	3.86
285.00	1155.29	380.62	774.67	46.92	1030.65	0.938	3.98
315.00	1155.29	390.51	764.78	46.72	1050.56	0.929	3.94
345.00	1155.29	393.10	762.19	46.53	1050.29	0.929	3.95

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51 IMMERSION NO. = 5		RADIUS = 11.030		SLOPE = 11.17			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	21.62	14.59	605.46	38.44	878.72	688.23	0.771
45.00	21.97	14.63	607.57	38.58	884.60	691.51	0.776
75.00	21.96	14.63	607.57	38.30	883.59	693.42	0.775
105.00	21.93	14.47	603.19	39.02	891.04	692.25	0.785
135.00	20.41	13.47	590.05	40.13	881.65	674.06	0.786
165.00	17.51	12.12	595.92	42.48	830.12	612.22	0.737
195.00	19.30	12.86	609.39	40.41	885.89	674.49	0.776
225.00	20.90	14.22	606.75	33.06	860.48	721.20	0.753
255.00	22.42	15.00	611.20	38.55	882.48	690.15	0.771
285.00	22.24	14.77	609.24	37.14	888.30	708.14	0.778
315.00	21.80	14.60	606.64	37.69	877.98	694.76	0.770
345.00	21.84	14.61	606.06	38.52	878.72	687.51	0.771
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	906.58	546.34	360.23	27.63	776.80	0.682	2.31
45.00	906.58	551.67	354.91	27.17	777.27	0.682	2.32
75.00	906.58	547.63	358.94	27.37	780.82	0.685	2.33
105.00	906.58	561.02	345.56	26.53	773.71	0.682	2.32
135.00	906.58	568.29	338.28	26.65	754.18	0.672	2.15
165.00	906.58	560.62	345.96	29.47	703.20	0.624	1.75
195.00	906.58	574.34	332.24	26.22	751.87	0.658	1.99
225.00	906.58	469.37	437.21	31.23	843.37	0.738	2.34
255.00	906.58	549.97	356.61	27.33	776.83	0.679	2.36
285.00	906.58	536.30	370.28	27.60	799.10	0.700	2.40
315.00	906.58	536.80	369.78	28.02	787.04	0.690	2.33
345.00	906.58	547.26	359.32	27.59	775.74	0.681	2.31

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 2.20		RADIUS = 17.130		SLOPE = 0.24			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
6.83	18.41	13.66	595.86	1.48	758.72	758.45	0.667
36.83	18.36	13.82	595.13	1.41	739.78	739.56	0.649
66.83	18.47	13.92	595.81	1.28	739.81	739.62	0.649
96.83	18.38	14.11	583.94	1.72	714.49	714.17	0.626
126.83	17.99	14.62	591.85	2.83	634.24	633.46	0.552
156.83	16.90	14.51	589.28	2.66	537.56	536.98	0.461
186.83	17.64	14.31	606.35	1.06	650.44	650.33	0.555
216.83	18.03	14.04	611.95	0.78	712.35	712.28	0.609
246.83	18.82	13.79	594.94	1.20	779.25	779.08	0.681
276.83	18.25	13.65	597.15	1.43	749.85	749.62	0.658
306.83	18.35	13.62	596.22	1.60	758.53	758.23	0.667
336.83	18.42	13.59	596.84	1.53	766.23	765.96	0.674
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
6.83	1407.95	-19.58	1427.52	62.02	1616.50	1.421	3.34
36.83	1407.95	-18.14	1426.09	62.59	1606.45	1.410	3.29
66.83	1407.95	-16.56	1424.51	62.56	1603.08	1.408	3.31
96.83	1407.95	-21.43	1429.38	63.45	1597.86	1.408	3.23
126.83	1407.95	-31.36	1439.30	66.24	1572.53	1.369	2.93
156.83	1407.95	-24.94	1432.89	69.46	1530.20	1.313	2.41
186.83	1407.95	-12.07	1420.02	65.39	1561.85	1.333	2.83
216.83	1407.95	-9.70	1417.65	63.32	1586.53	1.355	3.05
246.83	1407.95	-16.34	1424.29	61.32	1623.44	1.419	3.43
276.83	1407.95	-18.71	1426.65	62.28	1611.60	1.414	3.29
306.83	1407.95	-21.19	1429.14	62.05	1617.82	1.422	3.33
336.83	1407.95	-20.52	1428.47	61.80	1620.87	1.425	3.36

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 2.20 IMMERSION NO. = 3		RADIUS = 14,420		SLOPE = 1.13			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
29.00	18.58	13.31	533.86	2.41	799.91	799.20	0.707
59.00	18.64	13.41	535.81	2.45	793.31	794.58	0.702
89.00	18.67	13.48	535.81	2.69	791.02	790.15	0.698
119.00	18.59	13.87	534.25	2.65	750.87	750.07	0.661
149.00	17.58	14.18	574.24	2.26	640.94	640.45	0.582
179.00	17.66	13.82	599.40	2.17	698.30	697.80	0.602
209.00	18.05	13.53	605.41	1.85	758.15	757.76	0.655
239.00	19.47	13.39	615.58	1.73	866.80	866.43	0.752
269.00	18.64	13.29	593.22	2.13	809.88	809.32	0.712
299.00	18.38	13.15	596.74	2.43	801.96	801.24	0.708
329.00	18.51	13.19	598.58	2.31	806.17	805.52	0.712
359.00	18.52	13.21	596.01	2.39	804.97	804.27	0.712
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
29.00	1185.21	-33.58	1219.79	56.75	1457.45	1.288	3.78
59.00	1185.21	-33.93	1219.16	56.91	1455.23	1.285	3.78
89.00	1185.21	-37.11	1222.31	57.12	1455.47	1.285	3.78
119.00	1185.21	-34.66	1219.86	58.41	1432.02	1.260	3.66
149.00	1185.21	-25.23	1210.44	62.12	1369.43	1.202	3.16
179.00	1185.21	-26.39	1211.60	60.06	1398.18	1.206	3.27
209.00	1185.21	-24.47	1209.67	57.94	1427.41	1.233	3.48
239.00	1185.21	-26.14	1211.38	54.43	1489.30	1.292	3.97
269.00	1185.21	-30.13	1215.34	56.34	1460.15	1.283	3.78
299.00	1185.21	-34.03	1219.23	56.69	1458.94	1.288	3.74
329.00	1185.21	-32.50	1217.71	56.52	1460.02	1.290	3.78
359.00	1185.21	-33.59	1219.60	56.56	1460.25	1.291	3.78

Table VIII. Circumferential Distortion Flow Survey Data; 100% Speed, Maximum Flow, IGV/Stator Schedule 0°/0° (Concluded).

PLANE NO. = 2.20 IMMERISION NO. = 5		RADIUS = 11.775		SLOPE = 1:14			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
18.56	19.64	13.07	601.94	86.14	891.67	886.56	0.786
48.56	19.81	13.35	600.85	89.48	877.73	873.71	0.773
78.56	20.30	13.50	599.66	84.92	890.24	886.96	0.786
108.56	20.56	14.03	599.81	83.40	862.95	861.44	0.759
138.56	20.16	14.26	592.13	82.09	819.05	818.50	0.721
168.56	17.51	13.55	580.52	80.37	701.89	701.87	0.616
198.56	18.23	13.23	607.44	80.58	798.82	798.78	0.692
228.56	18.46	12.95	612.52	81.42	850.70	850.44	0.738
258.56	19.65	12.76	612.05	86.80	923.60	917.10	0.810
288.56	19.64	12.82	605.26	86.24	913.09	907.69	0.804
318.56	19.61	12.88	602.77	86.32	905.92	900.42	0.799
348.56	19.64	12.95	601.26	86.65	907.78	901.68	0.802
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
18.56	967.81	-95.33	1063.14	50.17	1384.29	1.220	2.42
48.56	967.81	-83.88	1051.68	50.28	1367.26	1.204	2.43
78.56	967.81	-76.36	1044.18	49.65	1370.04	1.209	2.51
108.56	967.81	-51.17	1019.98	49.79	1334.31	1.173	2.51
138.56	967.81	-29.68	997.69	50.63	1290.48	1.136	2.43
168.56	967.81	-4.50	972.31	54.18	1199.17	1.053	1.97
198.56	967.81	-8.11	975.92	50.70	1261.14	1.092	2.13
228.56	967.81	-21.09	988.90	49.30	1304.29	1.132	2.21
258.56	967.81	-109.38	1077.19	49.59	1414.71	1.240	2.42
288.56	967.81	-99.18	1066.96	49.61	1400.85	1.234	2.43
318.56	967.81	-99.66	1067.47	49.85	1396.51	1.232	2.43
348.56	967.81	-105.07	1072.67	49.96	1401.46	1.238	2.43

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0°.

PLANE NO. = 0.18		RADIUS = 17.415		SLOPE = -1.29			
COMPRESSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.35	13.25	516.69	-8.98	374.73	370.14	0.339
15.00	14.29	13.25	518.69	-8.95	365.12	360.68	0.330
30.00	14.34	13.24	518.69	-8.49	375.48	371.36	0.340
45.00	14.32	13.23	518.69	-8.03	372.59	368.93	0.337
60.00	14.34	13.20	518.69	-7.59	381.04	377.70	0.345
75.00	14.33	13.17	518.69	-7.15	384.93	381.94	0.349
90.00	14.41	13.12	518.69	-6.53	406.03	403.39	0.368
105.00	14.36	13.07	518.69	-5.92	406.73	404.56	0.369
120.00	14.33	12.92	518.69	-4.53	426.30	424.97	0.387
135.00	13.81	12.77	518.69	-3.14	371.07	370.52	0.336
150.00	13.42	12.79	518.69	-6.18	292.57	290.87	0.264
165.00	13.41	12.81	518.69	-9.21	283.97	280.30	0.256
180.00	13.47	12.83	518.69	-10.70	293.96	288.85	0.265
195.00	13.41	12.85	518.69	-12.19	275.77	269.55	0.248
210.00	13.43	12.87	518.69	-13.39	274.09	266.63	0.247
225.00	13.40	12.90	518.69	-14.60	259.34	250.97	0.233
240.00	14.32	12.97	518.69	-13.42	416.34	404.97	0.378
255.00	14.33	13.04	518.69	-12.24	407.27	398.01	0.370
270.00	14.35	13.11	518.69	-11.82	399.97	391.49	0.363
285.00	14.34	13.17	518.69	-11.40	386.87	379.24	0.351
300.00	14.34	13.18	518.69	-11.24	385.98	378.58	0.350
315.00	14.29	13.19	518.69	-11.07	375.70	368.71	0.340
330.00	14.35	13.23	518.69	-10.03	379.09	373.29	0.343
345.00	14.30	13.26	518.69	-9.00	364.02	359.54	0.329

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	1001.96	-58.46	1060.42	70.76	1123.16	1.017	1.23
15.00	1001.96	-56.80	1058.76	71.19	1118.51	1.012	1.20
30.00	1001.96	-55.43	1057.39	70.65	1120.71	1.015	1.23
45.00	1001.96	-52.05	1054.01	70.71	1116.71	1.011	1.23
60.00	1001.96	-50.33	1052.29	70.26	1118.02	1.013	1.25
75.00	1001.96	-47.91	1049.87	70.01	1117.19	1.012	1.26
90.00	1001.96	-46.21	1048.17	68.95	1123.12	1.019	1.33
105.00	1001.96	-41.95	1043.91	68.82	1119.56	1.016	1.33
120.00	1001.96	-33.67	1035.63	67.69	1119.43	1.017	1.39
135.00	1001.96	-20.33	1022.29	70.08	1087.36	0.985	1.19
150.00	1001.96	-31.47	1033.43	74.28	1073.58	0.969	0.93
165.00	1001.96	-45.45	1047.41	75.02	1084.27	0.973	0.89
180.00	1001.96	-54.58	1056.54	74.71	1095.31	0.986	0.92
195.00	1001.96	-58.23	1060.19	75.73	1093.92	0.986	0.86
210.00	1001.96	-63.50	1065.46	75.95	1098.31	0.989	0.85
225.00	1001.96	-65.37	1067.33	76.77	1096.44	0.987	0.80
240.00	1001.96	-96.63	1098.59	69.76	1170.85	1.063	1.33
255.00	1001.96	-86.34	1088.30	69.91	1158.80	1.052	1.31
270.00	1001.96	-81.93	1083.89	70.14	1152.42	1.045	1.29
285.00	1001.96	-76.47	1078.43	70.63	1143.17	1.036	1.26
300.00	1001.96	-75.20	1077.16	70.64	1141.75	1.035	1.25
315.00	1001.96	-72.14	1074.10	71.05	1135.62	1.029	1.22
330.00	1001.96	-66.06	1068.02	70.73	1131.37	1.025	1.24
345.00	1001.96	-56.95	1058.91	71.25	1118.88	1.012	1.20

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.18 IMMERSION NO. = 3		RADIUS = 13.300		SLOPE = -1.08			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.37	13.06	518.69	-8.50	409.25	404.75	0.371
15.00	14.36	13.06	518.69	-7.98	408.12	404.17	0.370
30.00	14.38	13.05	518.69	-7.49	412.26	408.75	0.374
45.00	14.34	13.04	518.69	-6.99	409.92	406.87	0.372
60.00	14.37	13.00	518.69	-6.44	419.76	417.11	0.381
75.00	14.35	12.96	518.69	-5.90	423.99	421.74	0.385
90.00	14.39	12.90	518.69	-4.91	438.49	436.88	0.399
105.00	14.37	12.84	518.69	-3.93	444.49	443.44	0.404
120.00	14.33	12.80	518.69	-2.63	444.79	444.33	0.405
135.00	13.67	12.76	518.69	-1.33	349.57	349.47	0.316
150.00	13.38	12.75	518.69	-4.04	293.20	292.47	0.264
165.00	13.36	12.74	518.69	-6.75	290.72	288.71	0.262
180.00	13.38	12.74	518.69	-9.52	295.31	291.24	0.266
195.00	13.37	12.74	518.69	-12.30	292.00	285.30	0.263
210.00	13.42	12.78	518.69	-13.46	292.92	284.87	0.264
225.00	13.39	12.83	518.69	-14.63	275.58	266.65	0.248
240.00	14.35	12.85	518.69	-14.09	440.22	426.98	0.400
255.00	14.33	12.87	518.69	-13.55	433.63	421.56	0.394
270.00	14.38	12.94	518.69	-12.60	430.04	419.69	0.391
285.00	14.36	13.01	518.69	-11.65	416.82	408.23	0.379
300.00	14.37	13.02	518.69	-11.14	416.33	408.47	0.378
315.00	14.36	13.04	518.69	-10.64	411.55	404.47	0.374
330.00	14.37	13.05	518.69	-9.83	412.25	406.20	0.374
345.00	14.34	13.06	518.69	-9.03	406.25	401.21	0.369

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
0.	765.21	-60.53	825.73	63.89	919.60	0.835	1.47
15.00	765.21	-56.66	821.86	63.81	915.87	0.831	1.47
30.00	765.21	-53.70	818.91	63.47	915.25	0.831	1.48
45.00	765.21	-49.89	815.09	63.47	911.00	0.827	1.47
60.00	765.21	-47.12	812.32	62.82	913.15	0.829	1.51
75.00	765.21	-43.58	808.79	62.46	912.14	0.829	1.52
90.00	765.21	-37.57	802.78	61.44	913.95	0.831	1.57
105.00	765.21	-30.46	795.67	60.87	910.90	0.829	1.59
120.00	765.21	-20.41	785.62	60.51	902.56	0.821	1.59
135.00	765.21	-8.11	773.32	65.68	848.62	0.767	1.23
150.00	765.21	-20.66	785.86	69.59	838.52	0.756	1.02
165.00	765.21	-34.17	799.38	70.14	849.92	0.766	1.01
180.00	765.21	-48.87	814.07	70.32	864.60	0.780	1.02
195.00	765.21	-62.20	827.41	70.98	875.22	0.789	1.00
210.00	765.21	-68.21	833.41	71.13	880.75	0.794	1.00
225.00	765.21	-69.61	834.81	72.29	876.36	0.790	1.00
240.00	765.21	-107.17	872.38	63.92	971.26	0.884	1.53
255.00	765.21	-101.60	866.80	64.06	963.86	0.876	1.51
270.00	765.21	-93.81	859.02	63.96	956.06	0.869	1.51
285.00	765.21	-84.17	849.38	64.33	942.39	0.856	1.48
300.00	765.21	-80.47	845.68	64.22	939.16	0.853	1.48
315.00	765.21	-75.99	841.19	64.32	933.38	0.847	1.47
330.00	765.21	-70.42	835.62	64.08	929.12	0.844	1.47
345.00	765.21	-63.76	828.97	64.17	920.95	0.836	1.45

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.18 IMMERSION NO. = 5		RADIUS = 8.580		SLOPE = -0.33			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ASS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.35	13.07	518.69	-8.15	405.07	400.97	0.368
15.00	14.32	13.09	518.69	-6.84	398.45	395.61	0.361
30.00	14.36	13.07	518.69	-5.98	406.59	404.38	0.369
45.00	14.35	13.05	518.69	-5.12	407.87	406.25	0.370
60.00	14.33	13.01	518.69	-4.17	413.24	412.14	0.375
75.00	14.31	12.96	518.69	-3.22	417.49	416.83	0.379
90.00	14.37	12.89	518.69	-1.82	435.49	435.27	0.396
105.00	14.36	12.83	518.69	-0.43	444.51	444.50	0.404
120.00	14.31	12.80	518.69	2.26	442.32	441.98	0.402
135.00	13.75	12.78	518.69	4.95	361.55	360.20	0.327
150.00	13.35	12.78	518.69	-0.22	276.37	276.37	0.249
165.00	13.31	12.79	518.69	-5.38	266.42	265.24	0.240
180.00	13.34	12.80	518.69	-8.45	270.51	267.58	0.244
195.00	13.37	12.82	518.69	-11.52	272.77	267.27	0.246
210.00	13.43	12.83	518.69	-15.58	283.92	273.48	0.256
225.00	13.41	12.85	518.69	-19.64	274.66	258.68	0.247
240.00	14.30	12.87	518.69	-17.90	430.42	409.59	0.391
255.00	14.38	12.88	518.69	-16.16	438.74	421.41	0.399
270.00	14.36	12.94	518.69	-14.89	427.95	413.58	0.389
285.00	14.36	13.00	518.69	-13.62	417.54	405.80	0.379
300.00	14.34	13.03	518.69	-12.33	409.91	400.45	0.372
315.00	14.34	13.07	518.69	-11.05	403.91	396.42	0.366
330.00	14.35	13.06	518.69	-10.26	406.99	400.49	0.369
345.00	14.33	13.06	518.69	-9.47	403.73	398.22	0.366
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	493.64	-57.46	551.10	53.96	681.34	0.618	0.90
15.00	493.64	-47.45	541.10	53.83	670.30	0.608	0.88
30.00	493.64	-42.36	536.00	52.97	671.43	0.609	0.90
45.00	493.64	-36.40	530.04	52.53	667.82	0.606	0.91
60.00	493.64	-30.05	523.69	51.80	666.42	0.605	0.92
75.00	493.64	-23.45	517.09	51.13	664.18	0.603	0.92
90.00	493.64	-13.87	507.51	49.38	668.60	0.608	0.96
105.00	493.64	-3.34	496.98	48.19	666.76	0.607	0.98
120.00	493.64	17.44	476.20	47.13	649.70	0.591	0.97
135.00	493.64	31.20	462.45	52.08	586.18	0.530	0.78
150.00	493.64	-1.04	454.68	60.81	566.65	0.511	0.60
165.00	493.64	-24.98	518.62	62.91	582.52	0.525	0.57
180.00	493.64	-39.75	533.40	63.36	596.75	0.537	0.53
195.00	493.64	-54.47	548.12	64.01	609.81	0.549	0.58
210.00	493.64	-76.26	569.90	64.36	632.12	0.570	0.59
225.00	493.64	-92.31	585.96	66.18	640.52	0.577	0.56
240.00	493.64	-132.29	625.94	56.80	748.04	0.680	0.90
255.00	493.64	-122.11	615.76	55.61	746.15	0.679	0.93
270.00	493.64	-109.97	603.61	55.58	731.71	0.665	0.92
285.00	493.64	-98.32	591.97	55.57	717.70	0.652	0.90
300.00	493.64	-87.57	581.21	55.43	705.81	0.641	0.89
315.00	493.64	-77.41	571.06	55.23	695.17	0.631	0.88
330.00	493.64	-72.49	566.14	54.72	693.47	0.629	0.89
345.00	493.64	-66.43	560.07	54.59	687.21	0.624	0.89

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95		RADIUS = 17.420		SLOPE = -1.91			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
27.98	14.19	13.00	518.69	-3.19	392.86	392.25	0.356
57.98	14.22	12.97	518.69	-2.29	401.89	401.57	0.365
87.98	14.23	13.01	518.69	-3.47	397.49	396.76	0.361
117.98	14.18	12.97	518.69	0.	396.26	396.26	0.359
147.98	13.35	12.46	518.69	6.04	348.97	347.03	0.316
177.98	13.35	12.52	518.69	-6.01	336.75	334.90	0.304
207.98	13.33	12.55	518.69	-8.01	326.33	323.15	0.295
237.98	14.14	13.04	518.69	-11.79	378.98	370.98	0.343
267.98	14.20	13.02	518.69	-2.22	390.69	390.40	0.354
297.98	14.19	13.03	518.69	-2.73	388.15	387.71	0.352
327.98	14.20	13.02	518.69	-2.28	389.23	388.92	0.353
357.98	14.24	12.98	518.69	-2.98	404.68	404.13	0.367
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
27.98	1002.25	-21.66	1024.11	69.04	1096.66	0.994	2.31
57.98	1002.25	-16.06	1018.31	68.48	1094.63	0.993	2.36
87.98	1002.25	-24.06	1026.31	68.86	1100.33	0.998	2.34
117.98	1002.25	0.	1002.25	68.43	1077.74	0.977	2.33
147.98	1002.25	36.72	965.53	70.23	1026.00	0.928	1.95
177.98	1002.25	-35.26	1037.51	72.11	1090.22	0.985	1.89
207.98	1002.25	-45.47	1047.72	72.86	1096.42	0.990	1.83
237.98	1002.25	-77.44	1079.68	71.04	1141.64	1.034	2.19
267.98	1002.25	-15.13	1017.38	69.01	1089.71	0.988	2.30
297.98	1002.25	-18.49	1020.73	69.20	1091.89	0.990	2.29
327.98	1002.25	-15.48	1017.73	69.09	1089.51	0.988	2.30
357.98	1002.25	-21.04	1023.29	68.45	1100.20	0.998	2.38

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95 IMMERSION NO. = 3		RADIUS = 13.797		SLOPE = 4.85			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
27.98	14.34	12.31	518.69	-0.19	514.81	514.81	0.471
57.98	14.34	12.30	518.69	-0.23	515.99	515.99	0.472
87.98	14.35	12.31	518.69	-0.66	515.62	515.58	0.472
117.98	14.34	12.29	518.69	2.33	516.89	516.46	0.473
147.98	13.36	11.98	518.69	8.12	434.96	430.60	0.396
177.98	13.40	12.00	518.69	0.48	438.00	437.98	0.398
207.98	14.35	12.05	518.69	-3.04	430.01	429.41	0.391
237.98	14.33	12.48	518.69	-4.96	490.07	488.23	0.448
267.98	14.35	12.39	518.69	-0.34	504.99	504.98	0.462
297.98	14.35	12.36	518.69	0.06	508.79	508.79	0.465
327.98	14.35	12.34	518.69	0.	510.95	510.95	0.467
357.98	14.35	12.31	518.69	-0.27	515.74	515.73	0.472
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
27.98	793.80	-1.71	795.51	57.09	947.56	0.867	3.14
57.98	793.80	-2.07	795.87	57.04	948.50	0.868	3.14
87.98	793.80	-5.94	799.74	57.19	951.53	0.871	3.14
117.98	793.80	21.01	772.79	56.24	929.48	0.851	3.14
147.98	793.80	61.44	732.36	59.55	849.57	0.773	2.52
177.98	793.80	3.67	790.13	61.00	903.40	0.822	2.57
207.98	793.80	-22.80	816.61	52.26	922.62	0.839	2.53
237.98	793.80	-42.37	836.17	59.72	968.27	0.884	3.00
267.98	793.80	-3.00	796.80	57.63	943.34	0.863	3.09
297.98	793.80	0.53	793.27	57.32	942.41	0.862	3.11
327.98	793.80	0.	793.60	57.23	944.03	0.864	3.12
357.98	793.80	-2.43	796.23	57.07	948.67	0.868	3.14

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95 IMMERSION NO. = 5		RADIUS = 9.910		SLOPE = 15.45			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
27.98	14.34	12.44	518.69	-0.45	481.00	480.98	0.440
57.98	14.34	12.47	518.69	-0.68	475.58	475.54	0.434
87.98	14.34	12.48	518.69	-0.62	475.18	475.15	0.434
117.98	14.32	12.43	518.69	16.52	481.32	461.45	0.440
147.98	13.59	12.18	518.69	18.17	423.13	402.03	0.385
177.98	13.34	12.03	518.69	-1.85	410.39	410.17	0.373
207.98	13.41	12.06	518.69	-7.46	415.97	412.45	0.378
237.98	14.30	12.41	518.69	-9.42	480.47	474.00	0.439
267.98	14.34	12.52	518.69	-1.77	468.94	468.72	0.428
297.98	14.31	12.51	518.69	-0.34	467.54	467.54	0.427
327.98	14.32	12.47	518.69	0.16	473.21	473.21	0.432
357.98	14.32	12.46	518.69	-0.74	476.17	476.13	0.435
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
27.98	570.16	-3.78	573.94	50.04	748.83	0.684	1.93
57.98	570.16	-5.64	575.81	50.45	746.79	0.682	1.91
87.98	570.16	-5.14	575.31	50.45	746.16	0.682	1.91
117.98	570.16	136.86	433.30	43.20	633.00	0.578	1.85
147.98	570.16	131.95	438.22	47.47	594.70	0.541	1.57
177.98	570.16	-13.25	583.41	54.89	713.17	0.648	1.58
207.98	570.16	-54.01	624.17	56.54	748.13	0.680	1.59
237.98	570.16	-78.64	648.80	53.85	803.50	0.734	1.90
267.98	570.16	-14.48	584.65	51.28	749.34	0.684	1.89
297.98	570.16	-2.77	572.94	50.78	739.49	0.675	1.88
327.98	570.16	1.32	568.84	50.24	739.94	0.676	1.90
357.98	570.16	-6.15	576.31	50.44	747.55	0.683	1.91

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51 IMMERSSION NO. = 1		RADIUS = 17.081		SLOPE = -0.83			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	18.13	15.60	564.31	30.31	533.50	460.58	0.468
45.00	18.16	15.64	565.07	30.77	533.52	458.42	0.468
75.00	18.17	15.65	565.70	30.74	533.12	458.21	0.467
105.00	18.09	15.62	564.41	31.37	527.41	450.31	0.462
135.00	17.64	15.38	561.30	37.27	508.80	404.90	0.447
165.00	17.94	15.46	576.67	40.84	536.22	405.67	0.465
195.00	18.02	15.46	583.80	41.53	547.68	410.00	0.472
225.00	18.50	15.66	587.53	35.48	573.04	466.63	0.494
255.00	18.27	15.65	572.21	32.79	545.96	458.97	0.476
285.00	18.22	15.63	567.69	32.07	540.19	457.75	0.473
315.00	18.14	15.63	565.48	31.10	531.95	455.49	0.466
345.00	18.18	15.60	566.61	30.79	539.55	463.50	0.472
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	982.74	269.25	713.50	57.16	849.24	0.745	2.50
45.00	982.74	272.95	709.80	57.14	844.96	0.741	2.49
75.00	982.74	272.50	712.24	57.17	845.22	0.740	2.49
105.00	982.74	274.55	708.20	57.55	839.24	0.736	2.45
135.00	982.74	308.11	674.63	59.03	786.81	0.691	2.17
165.00	982.74	350.66	632.08	57.31	751.06	0.651	2.14
195.00	982.74	363.12	619.62	56.51	742.99	0.641	2.13
225.00	982.74	332.60	650.14	54.33	800.27	0.690	2.46
255.00	982.74	295.67	687.07	56.26	826.27	0.720	2.47
285.00	982.74	286.61	695.93	56.66	832.98	0.729	2.48
315.00	982.74	274.77	707.97	57.24	841.84	0.737	2.47
345.00	982.74	276.19	706.55	56.73	845.01	0.740	2.51

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51 IMMERISION NO. = 3		RADIUS = 14.056		SLOPE = 3.14			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	18.16	14.98	559.92	32.83	599.55	503.79	0.531
45.00	18.17	14.97	560.49	32.85	601.89	505.64	0.533
75.00	18.18	14.99	560.64	32.77	600.46	504.90	0.532
105.00	18.06	14.96	559.09	33.69	593.16	493.54	0.526
135.00	17.67	14.79	557.87	39.01	576.18	447.71	0.510
165.00	17.84	14.75	567.56	41.95	599.86	446.13	0.528
195.00	17.69	14.76	571.03	43.00	588.07	430.09	0.515
225.00	18.23	14.89	576.82	38.28	623.82	489.70	0.545
255.00	18.01	15.02	565.33	36.37	586.20	472.01	0.516
285.00	18.11	14.94	560.69	34.47	599.06	493.88	0.530
315.00	18.17	14.98	560.58	33.44	600.93	501.46	0.532
345.00	18.15	14.95	560.29	32.82	601.64	505.61	0.533
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	808.70	325.04	483.66	43.83	698.38	0.619	2.97
45.00	808.70	326.49	482.21	43.64	698.72	0.619	2.98
75.00	808.70	325.01	483.69	43.77	699.20	0.619	2.98
105.00	808.70	329.03	479.67	44.18	688.24	0.610	2.91
135.00	808.70	362.68	446.02	44.89	631.97	0.560	2.61
165.00	808.70	401.00	407.71	42.42	604.37	0.532	2.56
195.00	808.70	401.06	407.64	43.47	592.57	0.519	2.44
225.00	808.70	386.46	422.24	40.77	646.60	0.565	2.80
255.00	808.70	347.61	461.09	44.33	659.84	0.581	2.76
285.00	808.70	339.05	469.05	43.56	681.53	0.603	2.90
315.00	808.70	331.15	477.55	43.60	692.47	0.613	2.95
345.00	808.70	326.09	482.61	43.67	698.96	0.619	2.98

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51		RADIUS = 11.030		SLOPE = 11.17			
IMMERSION NO. = 5							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	18.68	14.45	563.47	39.70	684.33	526.52	0.610
45.00	18.72	14.47	563.63	39.73	685.88	527.48	0.611
75.00	18.72	14.48	563.93	39.82	685.32	526.37	0.611
105.00	18.68	14.41	562.57	40.11	687.17	525.56	0.613
135.00	18.27	14.17	558.62	43.59	679.35	492.05	0.608
165.00	17.78	14.13	562.19	47.15	648.91	441.31	0.577
195.00	17.77	14.19	566.96	45.25	645.29	454.30	0.571
225.00	18.38	14.37	571.93	38.49	674.62	528.03	0.596
255.00	18.92	14.45	569.49	40.42	704.52	536.36	0.626
285.00	18.75	14.46	563.88	40.42	686.84	522.90	0.612
315.00	18.72	14.46	563.37	40.28	686.47	523.71	0.612
345.00	18.71	14.44	563.62	40.07	688.19	526.64	0.613
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	634.60	437.13	197.47	20.56	562.34	0.501	1.81
45.00	634.60	438.39	196.21	20.40	562.79	0.502	1.81
75.00	634.60	438.87	195.74	20.40	561.59	0.500	1.81
105.00	634.60	442.72	191.89	20.06	559.49	0.499	1.80
135.00	634.60	468.41	166.19	18.66	519.36	0.465	1.67
165.00	634.60	475.74	158.87	19.80	469.03	0.417	1.47
195.00	634.60	458.28	176.33	21.21	487.31	0.431	1.51
225.00	634.60	419.67	214.74	22.13	570.03	0.503	1.77
255.00	634.60	456.80	177.80	18.34	565.06	0.502	1.83
285.00	634.60	445.34	189.26	19.90	556.10	0.496	1.80
315.00	634.60	443.82	190.78	20.02	557.37	0.497	1.80
345.00	634.60	443.00	191.60	19.99	560.41	0.500	1.81

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 2.20		RADIUS = 17.130		SLOPE = 0.24			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
6.83	17.99	16.04	565.16	-0.84	467.97	467.92	0.408
36.83	17.95	16.06	565.06	-0.96	461.70	461.64	0.402
66.83	17.98	16.06	565.21	-1.15	464.81	464.72	0.405
96.83	17.95	16.08	564.59	-1.23	458.71	458.61	0.400
126.83	17.81	16.13	563.92	-0.63	434.54	434.52	0.378
156.83	17.60	16.19	567.81	0.47	401.52	401.51	0.348
186.83	17.78	16.14	578.65	0.98	435.84	435.78	0.375
216.83	18.00	16.07	583.16	0.17	472.63	472.62	0.406
246.83	18.02	16.03	572.22	-1.29	475.64	475.52	0.412
276.83	18.08	16.04	567.55	-1.47	479.29	479.13	0.417
306.83	17.96	16.06	566.20	-1.11	462.61	462.52	0.403
336.83	18.01	16.05	565.94	-0.77	469.33	469.29	0.409
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
6.83	985.56	-6.83	992.39	64.76	1097.17	0.957	2.38
36.83	985.56	-7.73	993.29	65.07	1095.33	0.955	2.35
66.83	985.56	-9.35	994.91	64.96	1098.10	0.957	2.37
96.83	985.56	-9.85	995.41	65.26	1095.98	0.956	2.34
126.83	985.56	-4.75	990.31	66.31	1081.45	0.942	2.22
156.83	985.56	3.27	982.29	67.77	1061.18	0.919	2.04
186.83	985.56	7.44	978.12	65.99	1070.81	0.920	2.17
216.83	985.56	1.39	984.17	64.35	1091.77	0.937	2.34
246.83	985.56	-10.69	996.25	64.48	1103.92	0.957	2.39
276.83	985.56	-12.33	997.89	64.35	1106.96	0.964	2.43
306.83	985.56	-8.99	994.56	65.06	1096.84	0.955	2.35
336.83	985.56	-6.32	991.89	64.68	1097.30	0.956	2.39

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 2.20 IMMERSION NO. = 3		RADIUS = 14.420		SLOPE = 1.13			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
29.00	18.01	15.61	558.99	-3.43	517.93	517.00	0.456
59.00	18.02	15.64	559.04	-3.47	516.70	515.75	0.455
89.00	18.03	15.66	558.68	-3.85	514.95	513.79	0.453
119.00	17.90	15.71	557.95	-3.99	494.78	493.58	0.435
149.00	17.40	15.80	553.91	-3.58	424.75	423.92	0.373
179.00	17.68	15.84	565.42	-2.87	458.32	457.75	0.399
209.00	17.49	15.74	568.69	-3.65	450.19	449.27	0.391
239.00	18.07	15.65	573.31	-4.28	525.71	524.24	0.457
269.00	17.73	15.65	560.13	-4.56	485.75	484.21	0.426
299.00	17.91	15.66	558.58	-4.22	502.50	501.14	0.442
329.00	17.96	15.62	556.37	-3.85	512.32	511.17	0.451
359.00	17.99	15.59	559.25	-3.72	518.79	517.69	0.457
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
29.00	829.64	-31.01	860.66	59.01	1004.00	0.884	2.85
59.00	829.64	-31.31	860.96	59.08	1003.62	0.883	2.84
89.00	829.64	-34.55	864.19	59.27	1005.39	0.884	2.84
119.00	829.64	-34.39	864.04	60.26	995.08	0.877	2.73
149.00	829.64	-26.54	856.19	63.66	955.39	0.839	2.35
179.00	829.64	-22.95	852.60	61.77	967.70	0.843	2.50
209.00	829.64	-28.69	858.34	62.37	968.81	0.841	2.43
239.00	829.64	-39.24	868.89	58.93	1014.79	0.882	2.82
269.00	829.64	-38.63	868.28	60.85	994.16	0.872	2.65
299.00	829.64	-36.95	866.60	59.96	1001.07	0.880	2.76
329.00	829.64	-34.37	864.01	59.39	1003.90	0.884	2.82
359.00	829.64	-33.62	863.27	59.85	1006.60	0.886	2.85

Table IX. Circumferential Distortion Flow Survey Data; 70% Speed, Intermediate Flow, IGV/Stator Schedule 0°/0° (Concluded).

PLANE NO. = 2.20		RADIUS = 11.775		SLOPE = 1.14			
IMMERSION NO. = 5							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
18.56	18.49	15.47	561.43	-2.39	579.33	578.83	0.511
48.56	18.47	15.52	561.53	-2.14	572.18	571.78	0.505
78.56	18.49	15.51	561.53	-2.87	574.62	573.90	0.507
108.56	18.47	15.55	560.65	-2.93	568.94	568.20	0.502
138.56	18.17	15.65	558.58	-2.55	529.50	528.98	0.467
168.56	17.34	15.79	555.10	-2.44	419.26	418.88	0.368
198.56	17.50	15.65	564.13	-1.22	460.83	460.73	0.402
228.56	18.18	15.53	570.09	-2.49	548.70	548.19	0.479
258.56	18.71	15.49	565.47	-2.00	597.95	597.59	0.527
288.56	18.55	15.55	562.36	-1.26	576.52	576.38	0.508
318.56	18.50	15.51	561.69	-2.14	575.89	575.49	0.508
348.56	18.50	15.46	561.27	-2.13	580.33	579.93	0.512
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
18.56	677.47	-24.13	701.60	50.48	909.55	0.803	1.88
48.56	677.47	-21.40	698.86	50.71	902.96	0.797	1.86
78.56	677.47	-28.81	706.27	50.90	910.04	0.803	1.86
108.56	677.47	-29.11	706.57	51.20	906.69	0.800	1.85
138.56	677.47	-23.54	701.00	52.96	878.20	0.774	1.73
168.56	677.47	-17.86	695.33	58.93	811.75	0.712	1.37
198.56	677.47	-9.80	687.27	56.16	827.41	0.722	1.48
228.56	677.47	-23.83	701.30	51.99	890.13	0.778	1.75
258.56	677.47	-20.91	698.38	49.45	919.16	0.810	1.93
288.56	677.47	-12.68	690.14	50.13	899.18	0.793	1.87
318.56	677.47	-21.50	698.96	50.53	905.39	0.799	1.87
348.56	677.47	-21.59	699.06	50.32	908.29	0.802	1.88

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall,
IGV/Stator Schedule 0°/0°.

PLANE NO. = 0.18 IMMERSION NO. = 1		RADIUS = 17.415		SLOPE = -1.29			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	13.85	11.68	518.69	-8.42	543.25	537.40	0.498
15.00	13.81	11.68	518.69	-8.21	538.88	533.36	0.494
30.00	13.85	11.63	518.69	-7.56	551.02	546.24	0.506
45.00	13.77	11.57	518.69	-6.90	549.63	545.65	0.505
60.00	13.83	11.51	518.69	-6.71	564.73	560.86	0.519
75.00	13.83	11.44	518.69	-6.52	573.05	569.35	0.527
90.00	14.02	11.37	518.69	-6.19	602.35	598.84	0.556
105.00	13.86	11.29	518.69	-5.86	595.47	592.36	0.549
120.00	13.80	11.01	518.69	-4.37	624.12	622.31	0.577
135.00	12.85	10.74	518.69	-2.89	559.03	558.32	0.514
150.00	11.97	10.76	518.69	-6.17	432.48	429.98	0.393
165.00	11.94	10.78	518.69	-9.45	422.80	417.06	0.384
180.00	12.05	10.80	518.69	-10.73	438.42	430.76	0.399
195.00	11.94	10.82	518.69	-12.00	415.76	406.67	0.378
210.00	11.97	10.89	518.69	-13.35	407.02	396.03	0.369
225.00	11.88	10.97	518.69	-14.69	375.50	363.22	0.340
240.00	13.86	11.16	518.69	-13.49	611.63	594.76	0.565
255.00	13.84	11.35	518.69	-12.28	585.96	572.56	0.540
270.00	13.85	11.47	518.69	-11.30	572.01	560.92	0.526
285.00	13.82	11.59	518.69	-10.32	552.98	544.03	0.508
300.00	13.83	11.61	518.69	-9.66	551.00	543.18	0.506
315.00	13.76	11.64	518.69	-9.01	540.40	533.73	0.496
330.00	13.84	11.66	518.69	-8.82	545.41	538.96	0.500
345.00	13.75	11.68	518.69	-8.63	532.18	526.16	0.488
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH FLOW
0.	1431.37	-79.55	1510.92	70.42	1603.64	1.471	1.62
15.00	1431.37	-76.95	1508.32	70.53	1599.85	1.467	1.60
30.00	1431.37	-72.45	1503.82	70.04	1599.95	1.469	1.64
45.00	1431.37	-66.03	1497.46	69.98	1593.72	1.463	1.63
60.00	1431.37	-65.99	1497.36	69.47	1598.95	1.470	1.67
75.00	1431.37	-65.07	1496.44	69.17	1601.09	1.473	1.69
90.00	1431.37	-64.95	1496.32	68.19	1611.70	1.487	1.77
105.00	1431.37	-60.80	1492.17	68.35	1605.45	1.480	1.74
120.00	1431.37	-47.61	1478.98	67.18	1604.57	1.484	1.79
135.00	1431.37	-28.19	1459.56	69.07	1562.70	1.436	1.55
150.00	1431.37	-46.48	1477.85	73.78	1539.13	1.399	1.47
165.00	1431.37	-69.42	1500.79	74.47	1557.66	1.415	1.44
180.00	1431.37	-81.59	1512.96	74.11	1573.09	1.431	1.48
195.00	1431.37	-86.44	1517.81	75.00	1571.35	1.427	1.41
210.00	1431.37	-93.95	1525.32	75.45	1575.89	1.430	1.41
225.00	1431.37	-95.22	1526.59	76.62	1569.21	1.421	1.40
240.00	1431.37	-132.63	1574.00	69.30	1682.62	1.554	1.73
255.00	1431.37	-124.63	1556.00	69.80	1658.00	1.527	1.69
270.00	1431.37	-112.08	1543.45	70.03	1642.22	1.511	1.67
285.00	1431.37	-99.06	1530.43	70.43	1624.25	1.491	1.63
300.00	1431.37	-92.51	1523.88	70.38	1617.79	1.485	1.63
315.00	1431.37	-84.63	1516.00	70.60	1607.21	1.474	1.60
330.00	1431.37	-83.63	1515.00	70.42	1608.01	1.475	1.62
345.00	1431.37	-79.86	1511.23	70.80	1600.20	1.467	1.58

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. IMMERSED NO. #	0.18 3	RADIUS =	13.300	SLOPE =	-1.08				
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.		
0.	13.86	11.29	518.69	-7.58	594.99	589.79	0.549		
15.00	13.87	11.29	518.69	-7.10	596.62	592.04	0.550		
30.00	13.88	11.24	518.69	-6.30	604.06	600.41	0.557		
45.00	13.83	11.18	518.69	-5.49	606.03	603.25	0.559		
60.00	13.89	11.13	518.69	-5.36	618.39	615.69	0.572		
75.00	13.86	11.07	518.69	-5.22	621.89	619.31	0.575		
90.00	13.95	10.97	518.69	-4.48	643.89	641.93	0.597		
105.00	13.88	10.86	518.69	-3.73	649.87	648.49	0.603		
120.00	13.80	10.79	518.69	-2.31	649.87	649.34	0.603		
135.00	12.18	10.72	518.69	-0.90	471.66	471.60	0.430		
150.00	11.80	10.69	518.69	-3.94	416.13	415.15	0.378		
165.00	11.74	10.66	518.69	-6.97	410.76	407.73	0.373		
180.00	11.83	10.70	518.69	-10.62	420.57	413.37	0.382		
195.00	11.72	10.74	518.69	-14.27	392.88	380.76	0.356		
210.00	11.83	10.80	518.69	-14.99	399.36	385.78	0.362		
225.00	11.75	10.87	518.69	-15.70	370.93	357.09	0.336		
240.00	13.83	10.88	518.69	-14.26	642.14	622.35	0.595		
255.00	13.78	10.90	518.69	-12.82	635.42	619.58	0.588		
270.00	13.93	11.03	518.69	-11.88	634.12	620.53	0.587		
285.00	13.87	11.17	518.69	-10.94	611.24	600.13	0.564		
300.00	13.91	11.22	518.69	-9.74	609.43	600.65	0.563		
315.00	13.85	11.26	518.69	-8.54	597.77	591.14	0.551		
330.00	13.88	11.28	518.69	-8.30	599.22	592.94	0.553		
345.00	13.83	11.29	518.69	-8.06	592.31	586.46	0.546		
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW		
0.	1093.15	-78.49	1171.64	63.28	1311.71	1.209	1.91		
15.00	1093.15	-73.74	1166.89	63.10	1308.49	1.207	1.92		
30.00	1093.15	-66.23	1159.38	62.62	1305.63	1.205	1.94		
45.00	1093.15	-57.98	1151.13	62.34	1299.62	1.200	1.94		
60.00	1093.15	-57.71	1150.86	61.85	1305.21	1.206	1.97		
75.00	1093.15	-56.58	1149.73	61.69	1305.92	1.207	1.98		
90.00	1093.15	-50.24	1143.39	60.69	1311.26	1.215	2.04		
105.00	1093.15	-42.28	1135.43	60.27	1307.57	1.213	2.04		
120.00	1093.15	-26.25	1119.40	59.83	1294.10	1.200	2.03		
135.00	1093.15	-7.41	1100.56	66.80	1197.35	1.092	1.42		
150.00	1093.15	-28.56	1121.71	69.69	1196.07	1.086	1.23		
165.00	1093.15	-49.85	1143.00	70.37	1213.54	1.102	1.21		
180.00	1093.15	-77.51	1170.66	70.55	1241.50	1.128	1.23		
195.00	1093.15	-96.84	1189.99	72.26	1249.42	1.133	1.13		
210.00	1093.15	-103.26	1196.41	72.13	1257.07	1.140	1.16		
225.00	1093.15	-100.37	1193.53	73.34	1245.80	1.128	1.07		
240.00	1093.15	-158.17	1251.32	63.56	1397.55	1.295	1.96		
255.00	1093.15	-140.99	1234.14	63.34	1380.94	1.279	1.95		
270.00	1093.15	-130.54	1223.69	63.11	1372.04	1.270	1.98		
285.00	1093.15	-116.00	1209.15	63.60	1349.89	1.247	1.93		
300.00	1093.15	-103.10	1196.25	63.34	1338.58	1.236	1.94		
315.00	1093.15	-88.77	1181.92	63.43	1321.51	1.219	1.91		
330.00	1093.15	-86.50	1179.65	63.31	1320.29	1.218	1.92		
345.00	1093.15	-83.05	1176.20	63.50	1314.30	1.211	1.90		

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.18 IMMERSSION NO. = 5		RADIUS = 8.580		SLOPE = -0.33			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	13.86	11.26	518.69	-6.32	599.12	595.47	0.553
15.00	13.85	11.27	518.69	-4.93	596.48	594.27	0.550
30.00	13.89	11.25	518.69	-4.52	603.87	601.99	0.557
45.00	13.89	11.23	518.69	-4.12	606.35	604.79	0.560
60.00	13.82	11.11	518.69	-3.04	614.71	613.84	0.568
75.00	13.81	10.98	518.69	-1.96	628.34	627.97	0.581
90.00	13.94	10.90	518.69	-1.09	650.67	650.55	0.603
105.00	13.87	10.82	518.69	-0.23	653.57	653.57	0.606
120.00	13.84	10.78	518.69	2.08	656.29	655.86	0.609
135.00	12.50	10.74	518.69	4.39	514.92	513.41	0.471
150.00	11.78	10.73	518.69	-1.49	404.10	403.96	0.367
165.00	11.72	10.73	518.69	-7.37	394.88	391.62	0.358
180.00	11.81	10.79	518.69	-10.48	399.98	393.31	0.363
195.00	11.77	10.84	518.69	-13.59	381.35	370.67	0.346
210.00	11.92	10.89	518.69	-16.78	400.11	383.08	0.363
225.00	11.84	10.93	518.69	-19.97	374.59	352.07	0.339
240.00	13.83	10.93	518.69	-17.76	636.18	605.86	0.589
255.00	13.87	10.93	518.69	-15.55	640.27	616.83	0.593
270.00	13.93	11.02	518.69	-13.87	635.66	617.11	0.589
285.00	13.87	11.11	518.69	-12.20	618.81	604.83	0.572
300.00	13.85	11.18	518.69	-10.62	608.02	597.59	0.561
315.00	13.84	11.26	518.69	-9.05	597.66	590.22	0.551
330.00	13.87	11.25	518.69	-8.38	600.74	594.32	0.554
345.00	13.85	11.25	518.69	-7.72	600.11	594.67	0.554

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	705.21	-66.00	771.21	52.33	974.34	0.899	1.18
15.00	705.21	-51.26	756.47	51.85	961.98	0.887	1.18
30.00	705.21	-47.64	752.85	51.35	963.93	0.890	1.20
45.00	705.21	-43.56	748.77	51.07	962.51	0.888	1.20
60.00	705.21	-32.60	737.81	50.24	959.77	0.887	1.21
75.00	705.21	-21.49	726.70	49.17	960.44	0.889	1.22
90.00	705.21	-12.43	717.64	47.81	968.62	0.898	1.27
105.00	705.21	-2.62	707.83	47.28	963.42	0.894	1.26
120.00	705.21	23.82	681.39	46.09	945.75	0.878	1.26
135.00	705.21	39.41	665.79	52.36	840.76	0.769	0.96
150.00	705.21	-10.51	715.71	60.56	821.84	0.746	0.74
165.00	705.21	-50.65	755.86	62.61	851.29	0.772	0.72
180.00	705.21	-72.75	777.96	63.18	871.73	0.791	0.72
195.00	705.21	-89.61	794.81	65.00	877.00	0.795	0.68
210.00	705.21	-115.51	820.72	64.98	903.72	0.822	0.71
225.00	705.21	-127.93	833.14	67.09	904.47	0.819	0.66
240.00	705.21	-194.05	899.26	56.03	1084.31	1.004	1.18
255.00	705.21	-171.64	876.85	54.87	1072.08	0.993	1.20
270.00	705.21	-152.43	857.64	54.26	1056.59	0.978	1.21
285.00	705.21	-130.77	835.98	54.11	1031.83	0.954	1.19
300.00	705.21	-112.11	817.31	53.83	1012.48	0.935	1.18
315.00	705.21	-94.01	799.22	53.55	993.53	0.916	1.17
330.00	705.21	-87.60	792.81	53.14	990.84	0.914	1.18
345.00	705.21	-80.61	785.82	52.88	985.47	0.909	1.18

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall.
IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. IMMERSION NO. #	0.95	1	RADIUS =	17.420	SLOPE =	-1.91	ABS MACH NO.
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	
27.98	13.56	10.79	518.69	0.03	627.30	627.30	0.580
57.98	13.63	10.67	518.69	-0.92	649.03	648.95	0.602
87.98	13.65	10.74	518.69	-0.58	641.84	641.81	0.595
117.98	13.51	10.63	518.69	0.57	641.77	641.74	0.595
147.98	11.80	9.84	518.69	4.26	560.82	559.27	0.515
177.98	11.83	9.69	518.69	-1.17	587.64	587.51	0.541
207.98	11.69	10.30	518.69	-7.78	469.24	464.92	0.428
237.98	13.51	11.58	518.69	-5.93	519.09	516.31	0.475
267.98	13.46	11.55	518.69	0.23	516.83	516.82	0.473
297.98	13.55	11.24	518.69	2.16	569.65	569.25	0.524
327.98	13.60	10.92	518.69	1.41	615.31	615.12	0.569
357.98	13.67	10.76	518.69	-0.42	641.01	641.00	0.594
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
27.98	1431.78	0.33	1431.45	66.34	1562.87	1.446	3.20
57.98	1431.78	-10.42	1442.20	65.77	1581.48	1.467	3.28
87.98	1431.78	-6.50	1438.28	65.95	1574.98	1.459	3.26
117.98	1431.78	6.38	1425.40	65.76	1563.20	1.448	3.23
147.98	1431.78	41.66	1390.12	68.08	1498.41	1.377	2.56
177.98	1431.78	-12.00	1443.78	67.86	1558.74	1.436	2.67
207.98	1431.78	-63.52	1495.30	72.73	1565.91	1.428	2.20
237.98	1431.78	-53.63	1485.41	70.83	1572.58	1.440	2.76
267.98	1431.78	2.07	1429.71	70.13	1520.25	1.391	2.76
297.98	1431.78	21.47	1410.31	68.02	1520.86	1.399	2.99
327.98	1431.78	15.14	1416.64	66.53	1544.42	1.427	3.16
357.98	1431.78	-4.70	1436.48	65.95	1573.01	1.457	3.27

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95 IMMERSION NO. = 3		RADIUS = 13.797		SLOPE = 4.85			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
27.98	13.83	9.88	518.69	0.72	752.95	752.89	0.707
57.98	13.81	9.86	518.69	0.76	753.58	753.52	0.706
87.98	13.82	9.87	518.69	1.05	753.31	753.18	0.708
117.98	13.80	9.84	518.69	2.65	754.92	754.12	0.709
147.98	11.69	8.97	518.69	6.36	671.40	667.26	0.624
177.98	11.77	8.89	518.69	-3.69	690.58	689.15	0.644
207.98	11.74	9.60	518.69	-7.38	588.20	583.33	0.542
237.98	13.76	10.56	518.69	-5.78	671.32	667.91	0.624
267.98	13.84	10.47	518.69	-1.32	688.54	688.36	0.642
297.98	13.82	10.20	518.69	0.31	717.91	717.90	0.671
327.98	13.83	9.97	518.69	0.77	742.83	742.76	0.697
357.98	13.83	9.88	518.69	0.59	752.67	752.63	0.707
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
27.98	1134.00	9.46	1124.54	56.20	1353.31	1.271	3.88
57.98	1134.00	10.00	1124.01	56.16	1353.21	1.271	3.88
87.98	1134.00	13.80	1120.20	56.08	1349.86	1.268	3.88
117.98	1134.00	34.90	1099.10	55.55	1332.93	1.253	3.88
147.98	1134.00	74.37	1059.63	57.80	1252.22	1.164	3.06
177.98	1134.00	-44.44	1178.45	59.68	1365.16	1.272	3.15
207.98	1134.00	-75.55	1209.55	64.25	1342.87	1.238	2.81
237.98	1134.00	-67.61	1201.61	60.93	1374.76	1.278	3.61
267.98	1134.00	-15.86	1149.86	59.09	1340.16	1.249	3.70
297.98	1134.00	3.88	1130.12	57.57	1338.86	1.252	3.79
327.98	1134.00	9.98	1124.02	56.54	1347.26	1.264	3.85
357.98	1134.00	7.75	1126.25	56.25	1354.58	1.273	3.88

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall,
IGV Stator Schedule 0°/0° (Continued).

PLANE NO. = 0.95		RADIUS = 9.910		SLOPE = 15.45			
IMMERISION NO. #	5	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY
CIRC. POSITION							ABS MACH NO.
27.98	13.86	9.97	518.69	-1.48	721.38	721.14	0.677
57.98	13.83	9.97	518.69	-1.53	718.67	718.41	0.674
87.98	13.85	9.95	518.69	-0.98	722.56	722.45	0.678
117.98	13.81	9.87	518.69	2.66	728.60	727.81	0.685
147.98	12.12	9.31	518.69	14.96	650.96	628.89	0.605
177.98	11.82	8.99	518.69	-9.63	661.13	651.82	0.616
207.98	11.87	9.52	518.69	-14.38	597.27	578.56	0.552
237.98	13.77	10.39	518.69	-11.63	670.88	657.11	0.625
267.98	13.85	10.47	518.69	-2.52	667.93	667.29	0.623
297.98	13.77	10.19	518.69	-0.22	691.00	690.99	0.646
327.98	13.80	10.04	518.69	-0.63	709.52	709.48	0.665
357.98	13.80	9.97	518.69	-1.18	717.34	717.19	0.673
		WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.
CIRC. POSITION							LOCAL MW. FLOW
27.98	814.52	-18.63	833.15	49.12	1101.90	1.034	2.45
57.98	814.52	-19.19	833.71	49.25	1100.54	1.033	2.44
87.98	814.52	-12.36	826.88	48.86	1098.03	1.031	2.45
117.98	814.52	33.81	780.71	47.01	1067.34	1.003	2.45
147.98	814.52	168.04	646.48	45.79	901.91	0.839	1.96
177.98	814.52	-110.60	925.12	54.83	1131.68	1.054	1.96
207.98	814.52	-148.33	962.86	59.00	1123.31	1.038	1.82
237.98	814.52	-135.24	949.76	55.32	1154.92	1.077	2.29
267.98	814.52	-29.37	843.89	51.67	1075.84	1.003	2.35
297.98	814.52	-2.65	817.17	49.78	1070.16	1.000	2.38
327.98	814.52	-7.60	822.32	49.21	1086.08	1.018	2.42
357.98	814.52	-14.77	829.29	49.15	1096.40	1.029	2.43

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 1.51		RADIUS = 17.081		SLOPE = -0.83			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	22.29	16.72	612.41	34.55	761.86	627.49	0.654
45.00	22.34	16.77	613.41	34.57	761.59	627.11	0.653
75.00	22.44	16.78	613.98	34.57	766.89	631.49	0.658
105.00	22.24	16.74	612.84	35.14	757.45	619.41	0.650
135.00	21.60	16.37	607.32	41.27	745.42	560.27	0.642
165.00	23.89	17.84	654.24	44.77	793.09	563.05	0.659
195.00	24.94	17.85	675.34	49.11	859.95	562.93	0.708
225.00	24.69	17.84	689.03	47.44	856.81	579.51	0.697
255.00	21.00	15.90	654.86	49.41	775.57	504.62	0.643
285.00	22.18	16.11	646.09	45.15	823.99	581.12	0.692
315.00	22.55	16.62	621.63	37.47	790.24	627.19	0.675
345.00	22.53	16.73	617.79	36.23	778.19	627.73	0.666
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	1403.92	432.07	971.85	57.15	1156.82	0.993	3.50
45.00	1403.92	432.13	971.79	57.16	1156.56	0.992	3.50
75.00	1403.92	435.15	968.77	56.90	1156.42	0.992	3.53
105.00	1403.92	435.97	967.95	57.38	1149.17	0.986	3.45
135.00	1403.92	491.69	912.23	58.44	1070.54	0.922	3.08
165.00	1403.92	558.55	845.37	56.33	1015.72	0.844	3.14
195.00	1403.92	650.09	753.83	53.25	948.82	0.774	3.08
225.00	1403.92	631.10	772.62	53.13	965.96	0.786	3.10
255.00	1403.92	588.96	814.96	58.23	958.54	0.795	2.50
285.00	1403.92	584.17	819.74	54.67	1004.83	0.844	2.99
315.00	1403.92	480.74	923.18	55.81	1116.08	0.954	3.44
345.00	1403.92	459.93	943.99	56.38	1133.65	0.971	3.48

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. # 1.51		RADIUS # 14.056		SLOPE # 3.14			
IMMERSION NO. # 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	22.67	16.07	610.86	37.41	828.42	658.02	0.718
45.00	22.58	16.10	609.48	37.46	820.79	651.52	0.712
75.00	22.47	16.03	607.98	37.06	819.40	653.89	0.711
105.00	22.25	15.93	607.14	37.49	814.61	646.36	0.707
135.00	21.43	15.71	604.51	43.37	784.69	570.42	0.680
165.00	22.44	16.59	632.15	48.16	792.21	528.45	0.671
195.00	22.80	16.37	643.46	53.24	835.50	500.01	0.704
225.00	23.70	16.51	658.19	48.43	880.70	564.37	0.737
255.00	21.48	15.68	618.96	40.29	798.99	609.45	0.685
285.00	22.54	15.94	613.90	40.92	833.11	629.52	0.720
315.00	22.44	16.02	611.64	39.16	821.34	636.86	0.711
345.00	22.65	16.12	611.98	38.30	824.89	647.35	0.714
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MP. FLOW
15.00	1155.29	503.28	652.01	44.74	926.34	0.803	3.99
45.00	1155.29	499.21	656.08	45.20	924.62	0.802	3.96
75.00	1155.29	493.81	661.47	45.33	930.12	0.807	3.96
105.00	1155.29	495.79	659.50	45.58	923.43	0.802	3.89
135.00	1155.29	538.85	616.43	47.22	839.86	0.728	3.38
165.00	1155.29	590.21	565.08	46.92	773.68	0.655	3.16
195.00	1155.29	669.36	485.93	44.18	697.24	0.588	2.92
225.00	1155.29	658.89	496.40	40.35	766.75	0.642	3.39
255.00	1155.29	516.67	638.62	46.34	882.76	0.757	3.53
285.00	1155.29	545.69	609.60	44.08	876.30	0.758	3.77
315.00	1155.29	518.67	636.62	44.99	900.48	0.779	3.83
345.00	1155.29	511.25	644.04	44.85	913.16	0.790	3.92

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. IMMERSION NO. = 1.51		RADIUS = 11.030		SLOPE = 11.17			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	22.34	15.47	603.57	43.12	841.75	614.41	0.736
45.00	22.24	15.46	602.36	43.03	837.07	611.90	0.733
75.00	22.32	15.48	603.23	42.63	839.51	617.66	0.734
105.00	21.90	15.38	598.46	42.60	822.72	605.60	0.721
135.00	22.12	15.41	600.56	47.24	836.97	568.24	0.734
165.00	22.20	15.86	615.61	54.16	818.53	479.27	0.706
195.00	22.41	15.79	630.77	59.77	845.21	425.54	0.721
225.00	23.15	15.68	645.52	51.04	897.34	564.23	0.762
255.00	22.84	15.59	617.54	43.19	867.18	632.25	0.752
285.00	22.60	15.52	603.32	44.63	851.16	605.74	0.746
315.00	22.70	15.59	603.82	44.35	851.08	608.59	0.745
345.00	22.51	15.58	602.36	43.55	841.81	610.12	0.737
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	906.58	575.36	331.22	28.33	698.00	0.611	2.17
45.00	906.58	571.20	335.37	28.73	697.78	0.611	2.17
75.00	906.58	568.57	338.01	28.69	704.10	0.616	2.19
105.00	906.58	556.88	349.70	30.00	699.31	0.613	2.14
135.00	906.58	614.50	292.07	27.20	638.91	0.560	2.01
165.00	906.58	603.55	243.03	26.89	537.37	0.463	1.69
195.00	906.58	730.27	176.31	22.51	460.62	0.393	1.46
225.00	906.58	697.74	208.82	20.31	601.63	0.511	1.90
255.00	906.58	593.51	333.06	26.34	705.51	0.611	2.21
285.00	906.58	597.96	308.61	27.00	679.82	0.596	2.16
315.00	906.58	594.94	311.64	27.12	683.74	0.599	2.17
345.00	906.58	580.00	326.58	28.16	692.03	0.606	2.18

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 2.20		RADIUS = 17.130		SLOPE = 0.24			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
6.83	21.92	18.46	615.79	-0.81	595.05	594.99	0.901
36.83	21.93	18.45	615.22	-1.35	597.03	596.86	0.903
66.83	21.92	18.41	614.90	-1.65	599.98	599.73	0.906
96.83	21.92	18.48	615.89	-1.54	593.26	593.04	0.900
126.83	21.65	18.64	614.49	-0.94	555.82	555.75	0.867
156.83	21.34	18.67	625.23	-0.08	531.63	531.63	0.842
186.83	23.47	18.45	657.18	0.66	724.44	724.39	0.996
216.83	23.53	18.27	674.45	0.02	751.55	751.55	0.612
246.83	23.13	18.25	665.74	-0.71	723.29	723.23	0.591
276.83	21.64	18.42	645.30	-1.08	591.55	591.45	0.486
306.83	21.90	18.45	627.04	-0.51	599.93	599.91	0.501
336.83	21.97	18.45	620.45	-0.11	602.83	602.83	0.506
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MP. FLOW
6.83	1407.95	-8.45	1416.40	67.21	1536.30	1.294	3.25
36.83	1407.95	-14.07	1422.01	67.23	1542.19	1.300	3.26
66.83	1407.95	-17.29	1425.24	67.18	1546.28	1.304	3.28
96.83	1407.95	-15.96	1423.91	67.39	1542.47	1.299	3.24
126.83	1407.95	-9.09	1417.04	68.59	1522.12	1.279	3.06
156.83	1407.95	-0.74	1408.69	69.32	1505.67	1.252	2.86
186.83	1407.95	8.40	1399.55	62.63	1575.91	1.297	3.78
216.83	1407.95	0.29	1407.65	61.90	1595.72	1.299	3.80
246.83	1407.95	-9.01	1416.96	62.96	1590.86	1.301	3.68
276.83	1407.95	-11.17	1419.11	67.38	1537.43	1.263	3.07
306.83	1407.95	-5.32	1413.27	67.00	1535.33	1.281	3.22
336.83	1407.95	-1.13	1409.08	66.84	1532.61	1.286	3.27

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Continued).

PLANE NO. = 2.20		RADIUS = 14.420		SLOPE = 1.13			
IMMERSION NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ARS FLOW ANGLE	ARS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
29.00	22.17	17.80	606.97	-2.17	665.97	665.49	0.569
59.00	22.08	17.79	605.72	-2.49	660.14	659.52	0.564
89.00	22.05	17.84	605.67	-2.61	653.70	653.02	0.558
119.00	21.88	17.99	605.21	-2.70	629.25	628.55	0.536
149.00	20.98	18.12	598.05	-3.99	542.44	541.13	0.462
179.00	21.46	18.07	625.17	-6.32	600.64	596.98	0.502
209.00	21.28	17.79	631.97	-8.15	616.12	609.90	0.513
239.00	22.87	17.70	650.75	-6.55	742.84	737.99	0.516
269.00	21.15	17.84	610.03	-3.81	589.95	588.65	0.499
299.00	22.12	17.83	611.79	-2.33	662.39	661.85	0.563
329.00	22.15	17.78	607.80	-1.91	666.20	665.83	0.569
359.00	22.10	17.79	607.38	-1.80	662.28	661.95	0.565
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
29.00	1185.21	-25.18	1210.38	61.20	1381.27	1.180	3.93
59.00	1185.21	-28.62	1213.83	61.48	1381.43	1.181	3.90
89.00	1185.21	-29.80	1215.00	61.74	1379.37	1.178	3.87
119.00	1185.21	-29.65	1214.86	62.64	1367.83	1.166	3.74
149.00	1185.21	-37.70	1222.91	66.13	1337.29	1.139	3.24
179.00	1185.21	-66.17	1251.37	64.50	1386.48	1.159	3.43
209.00	1185.21	-87.34	1272.55	64.39	1411.15	1.174	3.42
239.00	1185.21	-84.75	1269.95	59.84	1468.81	1.218	4.09
269.00	1185.21	-39.19	1224.40	64.32	1358.55	1.149	3.82
299.00	1185.21	-26.87	1212.08	61.36	1381.01	1.174	3.88
329.00	1185.21	-22.18	1207.39	61.13	1378.81	1.177	3.93
359.00	1185.21	-20.82	1206.03	61.24	1375.75	1.174	3.90

Table X. Circumferential Distortion Flow Survey Data; 100% Speed, Near Stall, IGV/Stator Schedule 0°/0° (Concluded).

PLANE NO. IMMERSION NO. #	2.20 5	RADIUS = 11.775		SLOPE = 1.14													
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.										
18.56	22.13	17.39	603.86	-1.90	694.91	694.53	0.597										
48.56	22.01	17.43	604.84	-1.99	685.11	684.70	0.587										
78.56	21.99	17.40	603.75	-2.17	684.75	684.26	0.588										
108.56	22.04	17.55	604.53	-2.14	676.23	676.23	0.580										
138.56	21.37	17.72	599.34	-4.43	613.26	611.43	0.525										
168.56	19.33	18.64	590.01	-67.41	270.39	103.65	0.228										
198.56	18.98	18.52	621.18	-31.14	228.15	195.27	0.187										
228.56	19.26	18.38	632.07	-12.52	317.76	310.21	0.259										
258.56	22.37	17.45	618.69	-4.85	713.74	711.18	0.606										
288.56	22.14	17.42	604.38	-2.71	694.01	693.23	0.596										
318.56	22.20	17.35	603.34	-2.45	702.40	701.76	0.604										
348.56	22.13	17.45	603.03	-2.17	689.90	689.40	0.593										
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW										
18.56	967.81	-23.08	990.89	54.97	1210.06	1.039	2.40										
48.56	967.81	-23.77	991.58	55.37	1205.01	1.033	2.36										
78.56	967.81	-25.93	993.74	55.45	1206.53	1.035	2.36										
108.56	967.81	-25.28	993.09	55.75	1201.46	1.029	2.34										
138.56	967.81	-47.32	1015.13	58.94	1185.05	1.014	2.13										
168.56	967.81	-249.65	1217.46	85.12	1221.88	1.031	0.37										
198.56	967.81	-117.99	1085.80	79.80	1103.22	1.006	0.66										
228.56	967.81	-68.87	1036.68	73.34	1082.10	0.884	1.02										
258.56	967.81	-60.39	1028.20	55.33	1250.18	1.062	2.41										
288.56	967.81	-32.80	1000.61	55.29	1217.29	1.045	2.39										
318.56	967.81	-30.00	997.81	54.88	1219.87	1.049	2.42										
348.56	967.81	-26.10	993.91	55.25	1209.60	1.039	2.39										

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8°.

PLANE NO. = 0.18 IMMERSION NO. = 1		RADIUS = 17.415		SLOPE = -1.29			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.47	13.79	519.69	-1.47	291.80	291.70	0.263
15.00	14.48	13.78	518.69	-1.07	295.81	295.76	0.267
30.00	14.44	13.77	518.69	-0.46	289.88	289.87	0.261
45.00	14.46	13.77	518.69	0.14	294.02	294.02	0.265
60.00	14.45	13.75	518.69	0.22	296.24	296.24	0.267
75.00	14.47	13.74	518.69	0.30	303.78	303.78	0.274
90.00	14.46	13.68	518.69	1.09	312.33	312.27	0.282
105.00	14.47	13.63	518.69	1.88	323.82	323.82	0.293
120.00	14.45	13.57	518.69	2.47	333.50	333.19	0.301
135.00	13.87	13.51	518.69	3.06	215.27	214.97	0.193
150.00	13.89	13.50	518.69	2.00	226.72	226.59	0.204
165.00	13.87	13.48	518.69	0.94	226.34	226.31	0.203
180.00	13.85	13.47	518.69	-1.06	219.83	219.79	0.198
195.00	13.83	13.47	518.69	-3.05	215.73	215.42	0.194
210.00	13.88	13.46	518.69	-4.81	233.35	232.53	0.210
225.00	14.04	13.45	518.69	-6.56	276.08	274.27	0.249
240.00	14.43	13.56	518.69	-5.07	331.03	329.73	0.299
255.00	14.46	13.67	518.69	-3.59	315.49	314.87	0.285
270.00	14.44	13.71	518.69	-3.18	303.89	303.42	0.274
285.00	14.44	13.74	518.69	-2.77	296.10	295.75	0.267
300.00	14.45	13.76	518.69	-2.42	294.26	294.00	0.265
315.00	14.45	13.77	518.69	-2.07	290.58	290.39	0.262
330.00	14.46	13.78	518.69	-1.97	291.31	291.14	0.263
345.00	14.48	13.79	518.69	-1.87	292.03	291.88	0.263

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	1001.96	-7.49	1009.45	73.88	1050.75	0.947	1.00
15.00	1001.96	-5.52	1007.48	73.64	1050.00	0.947	1.01
30.00	1001.96	-2.35	1004.31	73.90	1045.31	0.942	0.99
45.00	1001.96	0.72	1001.24	73.63	1043.52	0.941	1.01
60.00	1001.96	1.14	1000.82	73.51	1043.74	0.941	1.01
75.00	1001.96	1.59	1000.37	73.11	1045.48	0.943	1.04
90.00	1001.96	5.94	996.02	72.59	1043.82	0.942	1.07
105.00	1001.96	10.63	991.33	71.91	1042.88	0.942	1.10
120.00	1001.96	14.37	987.59	71.36	1042.28	0.942	1.13
135.00	1001.96	11.49	990.47	77.75	1013.53	0.911	0.72
150.00	1001.96	7.91	994.05	77.16	1019.54	0.917	0.76
165.00	1001.96	3.71	998.25	77.23	1023.58	0.920	0.75
180.00	1001.96	-4.05	1006.01	77.68	1029.74	0.926	0.73
195.00	1001.96	-11.45	1013.44	78.00	1036.08	0.931	0.72
210.00	1001.96	-19.55	1021.51	77.18	1047.64	0.942	0.77
225.00	1001.96	-31.54	1033.50	75.14	1069.27	0.963	0.92
240.00	1001.96	-29.28	1031.24	72.27	1082.57	0.978	1.12
255.00	1001.96	-19.75	1021.71	72.87	1069.13	0.965	1.07
270.00	1001.96	-16.86	1019.82	73.42	1063.04	0.959	1.04
285.00	1001.96	-14.31	1016.27	73.77	1058.43	0.954	1.01
300.00	1001.96	-12.43	1014.38	73.84	1056.13	0.952	1.01
315.00	1001.96	-10.50	1012.46	74.00	1053.28	0.950	1.00
330.00	1001.96	-10.01	1011.97	73.95	1053.02	0.949	1.00
345.00	1001.96	-9.53	1011.49	73.90	1052.76	0.949	1.00

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.18		RADIUS = 13.300		SLOPE = -1.08			
IMMERSION NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.50	13.64	518.69	-0.75	328.00	327.97	0.296
15.00	14.48	13.63	518.69	-0.34	325.93	325.93	0.294
30.00	14.48	13.64	518.69	0.32	326.31	326.31	0.295
45.00	14.48	13.64	518.69	0.98	325.05	325.01	0.294
60.00	14.50	13.61	518.69	1.37	334.33	334.23	0.302
75.00	14.48	13.58	518.69	1.76	337.10	336.94	0.305
90.00	14.50	13.52	518.69	2.75	350.42	350.02	0.317
105.00	14.48	13.47	518.69	3.73	357.14	356.39	0.323
120.00	14.47	13.46	518.69	4.62	358.21	357.04	0.324
135.00	13.91	13.44	518.69	5.51	246.09	244.96	0.221
150.00	13.99	13.41	518.69	3.59	248.23	247.74	0.223
165.00	13.86	13.38	518.69	1.68	249.61	249.51	0.225
180.00	13.89	13.38	518.69	-0.60	256.88	256.86	0.231
195.00	13.86	13.38	518.69	-2.89	248.27	247.95	0.223
210.00	13.89	13.40	518.69	-4.91	252.67	251.74	0.227
225.00	13.96	13.42	518.69	-6.94	266.20	264.25	0.240
240.00	14.46	13.47	518.69	-6.11	354.05	352.04	0.320
255.00	14.48	13.52	518.69	-5.28	348.75	347.27	0.315
270.00	14.48	13.55	518.69	-4.50	342.30	341.24	0.309
285.00	14.49	13.59	518.69	-3.72	335.74	335.03	0.303
300.00	14.49	13.60	518.69	-3.19	334.23	333.72	0.302
315.00	14.47	13.62	518.69	-2.66	326.53	326.18	0.295
330.00	14.49	13.63	518.69	-1.91	328.16	327.98	0.296
345.00	14.49	13.64	518.69	-1.15	325.44	325.38	0.294

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	765.21	-4.26	769.47	66.91	836.45	0.755	1.23
15.00	765.21	-1.93	767.14	66.98	833.51	0.753	1.22
30.00	765.21	1.82	763.38	66.86	830.20	0.750	1.22
45.00	765.21	5.56	759.65	66.84	826.25	0.746	1.22
60.00	765.21	7.99	757.21	66.18	827.70	0.748	1.25
75.00	765.21	10.35	754.85	65.95	826.64	0.747	1.26
90.00	765.21	16.78	748.42	64.94	826.23	0.747	1.31
105.00	765.21	23.23	741.97	64.34	823.13	0.745	1.32
120.00	765.21	26.85	736.35	64.13	818.35	0.740	1.33
135.00	765.21	23.63	741.58	71.72	780.99	0.703	0.90
150.00	765.21	15.57	749.64	71.71	789.52	0.710	0.91
165.00	765.21	7.32	757.69	71.78	797.90	0.718	0.91
180.00	765.21	-2.71	767.92	71.51	809.74	0.729	0.94
195.00	765.21	-12.52	777.72	72.32	816.29	0.735	0.91
210.00	765.21	-21.65	786.65	72.26	826.14	0.744	0.92
225.00	765.21	-32.16	797.37	71.66	840.02	0.756	0.97
240.00	765.21	-37.68	802.89	66.32	876.68	0.793	1.31
255.00	765.21	-32.09	797.30	66.46	869.64	0.786	1.29
270.00	765.21	-26.86	792.06	66.69	862.44	0.780	1.27
285.00	765.21	-21.78	786.99	66.94	855.33	0.773	1.25
300.00	765.21	-18.60	783.81	66.94	851.99	0.770	1.25
315.00	765.21	-15.15	780.36	67.32	845.79	0.764	1.22
330.00	765.21	-10.91	776.11	67.09	842.57	0.761	1.23
345.00	765.21	-6.53	771.74	67.14	837.53	0.756	1.22

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.18		IMMERSION NO. = 5		RADIUS = 8.580		SLOPE = -0.33	
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.47	13.64	518.69	-0.24	324.20	324.19	0.273
15.00	14.45	13.63	518.69	0.45	321.19	321.18	0.290
30.00	14.47	13.62	518.69	1.30	327.24	327.15	0.296
45.00	14.48	13.61	518.69	2.16	330.23	329.99	0.298
60.00	14.47	13.58	518.69	3.12	335.09	334.59	0.303
75.00	14.45	13.54	518.69	4.08	339.63	338.77	0.307
90.00	14.48	13.51	518.69	5.43	349.75	348.19	0.316
105.00	14.48	13.47	518.69	6.77	355.63	353.15	0.322
120.00	14.45	13.44	518.69	8.53	356.82	352.87	0.323
135.00	14.03	13.41	518.69	10.30	283.50	278.93	0.255
150.00	13.89	13.39	518.69	6.93	253.84	251.98	0.228
165.00	13.87	13.38	518.69	3.56	251.99	251.50	0.227
180.00	13.88	13.39	518.69	0.85	252.20	252.18	0.227
195.00	13.87	13.39	518.69	-1.86	250.19	250.06	0.225
210.00	13.89	13.41	518.69	-5.75	250.14	248.88	0.225
225.00	14.01	13.42	518.69	-9.65	276.19	272.28	0.249
240.00	14.45	13.47	518.69	-8.45	353.13	349.29	0.319
255.00	14.47	13.51	518.69	-7.25	346.80	344.03	0.314
270.00	14.48	13.54	518.69	-6.20	343.14	341.13	0.310
285.00	14.45	13.57	518.69	-5.16	333.38	332.03	0.301
300.00	14.48	13.60	518.69	-4.45	332.86	331.86	0.301
315.00	14.47	13.63	518.69	-3.74	325.60	324.90	0.294
330.00	14.48	13.63	518.69	-2.34	326.79	326.52	0.295
345.00	14.47	13.64	518.69	-0.93	321.96	321.92	0.291
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	493.64	-1.36	495.00	56.78	591.72	0.534	0.75
15.00	493.64	2.52	491.12	56.82	586.82	0.530	0.74
30.00	493.64	7.45	486.19	56.06	586.01	0.529	0.75
45.00	493.64	12.45	481.20	55.56	583.48	0.529	0.76
60.00	493.64	18.24	475.41	54.86	581.35	0.525	0.77
75.00	493.64	24.16	469.48	54.19	578.94	0.523	0.78
90.00	493.64	33.07	460.58	52.91	577.38	0.522	0.80
105.00	493.64	41.92	451.72	51.98	573.38	0.519	0.81
120.00	493.64	52.96	440.69	51.32	564.55	0.511	0.81
135.00	493.64	50.69	442.95	57.80	523.46	0.472	0.63
150.00	493.64	30.63	463.02	61.44	527.14	0.474	0.57
165.00	493.64	15.65	478.00	62.25	540.13	0.486	0.57
180.00	493.64	3.74	489.90	62.76	551.00	0.496	0.57
195.00	493.64	-8.12	501.76	63.51	560.62	0.505	0.56
210.00	493.64	-25.08	518.73	64.37	575.34	0.518	0.56
225.00	493.64	-46.30	530.94	63.24	604.71	0.545	0.62
240.00	493.64	-51.89	545.53	57.37	647.78	0.586	0.80
255.00	493.64	-43.77	537.41	57.37	638.10	0.577	0.79
270.00	493.64	-37.09	530.73	57.27	630.91	0.570	0.78
285.00	493.64	-29.98	523.63	57.62	620.02	0.560	0.76
300.00	493.64	-25.83	519.47	57.43	616.42	0.557	0.76
315.00	493.64	-21.24	514.88	57.75	608.82	0.550	0.75
330.00	493.64	-13.31	506.96	57.22	603.01	0.545	0.75
345.00	493.64	-5.23	498.87	57.17	593.72	0.536	0.74

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95 IMMERSION NO. = 1		RADIUS = 17.420		SLOPE = -1.91			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
26.70	14.34	13.20	518.69	38.87	385.12	299.84	0.349
56.70	14.37	13.20	518.69	39.87	386.59	286.71	0.350
86.70	14.37	13.20	518.69	39.72	385.71	296.68	0.350
116.70	14.39	13.19	518.69	40.35	392.26	298.94	0.356
146.70	14.37	13.11	518.69	42.82	401.77	294.69	0.364
176.70	13.83	12.80	518.69	40.16	369.46	282.36	0.334
206.70	13.75	12.78	518.69	38.36	359.42	281.83	0.325
236.70	14.07	12.90	518.69	30.95	390.12	334.57	0.354
266.70	14.41	13.19	518.69	37.86	394.44	311.42	0.358
296.70	14.42	13.18	518.69	38.77	397.18	309.66	0.360
326.70	14.40	13.22	518.69	38.86	388.60	302.60	0.352
356.70	14.37	13.20	518.69	39.94	387.28	296.93	0.351
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
26.70	1002.25	241.68	760.56	68.48	817.54	0.741	1.79
56.70	1002.25	247.82	754.42	68.53	810.67	0.735	1.77
86.70	1002.25	246.49	755.76	68.57	811.91	0.736	1.77
116.70	1002.25	253.97	748.27	68.22	805.78	0.731	1.79
146.70	1002.25	273.08	729.17	67.99	786.47	0.714	1.75
176.70	1002.25	238.27	763.97	69.72	814.48	0.737	1.63
206.70	1002.25	223.06	779.19	70.12	828.59	0.750	1.63
236.70	1002.25	200.64	801.61	67.35	868.63	0.787	1.96
266.70	1002.25	242.08	760.17	67.72	821.48	0.745	1.86
296.70	1002.25	248.71	753.54	67.66	814.68	0.739	1.85
326.70	1002.23	243.82	758.43	68.25	816.57	0.740	1.81
356.70	1002.25	248.63	753.62	68.50	810.01	0.734	1.78

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95 IMMERSION NO. = 3		RADIUS = 13.797		SLOPE = 4.85			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.10	14.47	12.54	518.69	39.07	498.98	387.40	0.456
30.10	14.46	12.59	518.69	38.64	491.76	384.11	0.449
60.10	14.47	12.53	518.69	39.25	499.49	386.80	0.457
90.10	14.46	12.53	518.69	40.23	499.76	381.54	0.457
120.10	14.47	12.52	518.69	40.21	501.97	383.35	0.459
150.10	14.45	12.41	518.69	43.01	514.35	376.12	0.471
180.10	13.88	12.15	518.69	39.32	480.52	371.74	0.438
210.10	13.87	12.23	518.69	38.21	467.61	367.43	0.426
240.10	13.97	12.29	518.69	34.87	473.26	388.29	0.432
270.10	14.47	12.57	518.69	39.63	494.36	380.75	0.452
300.10	14.48	12.55	518.69	40.24	498.59	380.60	0.456
330.10	14.47	12.53	518.69	40.50	500.80	380.81	0.458
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.10	793.80	314.49	479.31	51.05	616.29	0.563	2.40
30.10	793.80	307.07	486.73	51.72	620.04	0.566	2.38
60.10	793.80	316.03	477.77	51.01	614.72	0.562	2.39
90.10	793.80	322.77	471.03	50.99	606.17	0.554	2.36
120.10	793.80	324.07	469.73	50.78	606.30	0.554	2.37
150.10	793.80	350.86	442.94	49.66	581.09	0.532	2.31
180.10	793.80	304.48	489.32	52.78	614.51	0.561	2.22
210.10	793.80	289.24	504.56	53.94	624.17	0.569	2.21
240.10	793.80	270.57	523.23	53.42	631.56	0.594	2.35
270.10	793.80	315.32	478.48	51.49	611.49	0.559	2.36
300.10	793.80	322.08	471.72	51.10	606.11	0.554	2.36
330.10	793.80	325.25	468.56	50.90	603.79	0.552	2.36

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95		RADIUS = 9.910		SLOPE = 15.45			
IMMERSION NO. = 5							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
21.60	14.46	12.11	518.69	35.85	541.38	438.82	0.497
51.60	14.47	12.11	518.69	35.08	542.04	443.58	0.498
81.60	14.47	12.13	518.69	36.45	540.13	434.46	0.496
111.60	14.47	12.09	518.69	36.63	544.75	437.16	0.500
141.60	14.40	12.02	518.69	39.51	548.55	423.21	0.504
171.60	14.06	11.78	518.69	40.05	542.23	415.07	0.498
201.60	13.85	11.86	518.69	35.69	506.92	411.71	0.464
231.60	13.87	11.98	518.69	32.88	492.51	413.61	0.450
261.60	14.45	12.19	518.69	33.33	530.43	443.18	0.487
291.60	14.47	12.16	518.69	35.55	536.63	436.61	0.493
321.60	14.47	12.13	518.69	35.99	540.15	437.05	0.496
351.60	14.47	12.11	518.69	35.07	541.81	443.45	0.498
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
21.60	570.16	317.07	253.10	29.98	506.57	0.465	1.73
51.60	570.16	311.52	258.64	30.25	513.48	0.472	1.75
81.60	570.16	320.90	249.26	29.84	500.89	0.460	1.72
111.60	570.16	325.02	245.14	29.28	501.21	0.460	1.73
141.60	570.16	348.99	221.17	27.59	477.52	0.439	1.66
171.60	570.16	348.90	221.26	28.06	470.36	0.432	1.59
201.60	570.16	295.73	274.43	33.69	494.79	0.453	1.58
231.60	570.16	267.37	302.79	36.21	512.60	0.469	1.60
261.60	570.16	291.45	278.72	32.17	523.54	0.480	1.76
291.60	570.16	312.00	258.16	30.60	507.22	0.466	1.73
321.60	570.16	317.42	252.75	30.04	504.87	0.464	1.73
351.60	570.16	311.31	258.85	30.27	513.47	0.472	1.75

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.51 IMMERSION NO. = 1		RADIUS = 17.081		SLOPE = -0.33			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	16.10	13.72	540.47	43.60	538.77	390.15	0.484
45.00	16.11	13.73	540.27	43.69	537.66	388.77	0.483
75.00	16.15	13.73	540.62	43.69	542.38	392.33	0.487
105.00	16.16	13.72	539.76	43.86	544.15	392.35	0.489
135.00	16.14	13.68	538.80	44.40	546.62	390.55	0.492
165.00	16.15	13.78	539.97	47.67	535.95	360.91	0.481
195.00	16.22	13.77	544.90	47.00	546.80	372.92	0.489
225.00	16.33	13.79	549.29	46.46	558.70	384.67	0.498
255.00	16.09	13.71	545.12	42.81	540.66	396.64	0.483
285.00	16.22	13.73	542.25	43.77	550.05	397.20	0.493
315.00	16.13	13.72	541.56	43.85	542.06	390.91	0.486
345.00	16.11	13.72	542.06	42.93	540.38	395.66	0.484
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH FLOW
15.00	982.74	371.55	511.19	57.45	725.11	0.651	1.95
45.00	982.74	371.39	511.35	57.55	724.50	0.650	1.95
75.00	982.74	374.79	507.95	57.16	723.55	0.649	1.96
105.00	982.74	377.04	505.70	57.07	721.67	0.648	1.97
135.00	982.74	382.45	500.29	56.95	716.15	0.644	1.96
165.00	982.74	396.22	586.53	58.39	688.67	0.618	1.81
195.00	982.74	399.90	582.84	57.39	691.93	0.619	1.86
225.00	982.74	405.00	577.75	56.33	694.20	0.619	1.91
255.00	982.74	367.42	515.32	57.19	732.08	0.654	1.97
285.00	982.74	380.50	502.24	56.59	721.43	0.647	1.99
315.00	982.74	375.52	507.22	57.23	722.17	0.648	1.95
345.00	982.74	368.05	514.69	57.23	731.02	0.655	1.97

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. IMMERSION NO. = 1.51	RADIUS = 14.056	SLOPE = 3.14		
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE
15.00	16.06	13.08	536.64	43.95
45.00	16.05	13.09	536.12	44.45
75.00	16.06	13.10	536.62	45.44
105.00	16.02	13.08	536.27	44.83
135.00	15.97	13.01	535.58	45.52
165.00	15.68	13.12	534.61	47.46
195.00	15.86	13.03	541.49	48.34
225.00	15.96	13.11	542.40	46.10
255.00	16.03	13.12	541.62	44.21
285.00	16.10	13.11	537.56	44.55
315.00	16.07	13.10	536.95	44.13
345.00	16.13	13.12	537.21	43.07
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE
15.00	808.70	420.11	388.60	41.72
45.00	808.70	422.12	385.58	41.94
75.00	808.70	422.90	385.81	41.82
105.00	808.70	424.55	384.16	41.97
135.00	808.70	431.42	377.28	41.69
165.00	808.70	416.06	392.64	45.80
195.00	808.70	444.86	363.84	42.59
225.00	808.70	430.65	378.05	42.37
255.00	808.70	418.88	389.82	42.15
285.00	808.70	425.69	383.02	41.53
315.00	808.70	421.58	387.12	41.69
345.00	808.70	414.88	393.82	41.58
		ABS VELOCITY	REL. VELOCITY	REL. MACH NO.
		605.31	583.89	0.529
		602.78	578.45	0.524
		604.00	578.63	0.524
		602.19	574.43	0.521
		604.66	567.30	0.515
		564.69	547.65	0.495
		381.79	537.62	0.485
		395.80	560.96	0.505
		414.43	560.84	0.524
		430.59	577.66	0.523
		432.43	582.00	0.527
		434.58	593.35	0.538
		443.82		
		ABS MACH NO.	LOCAL MT. FLOW	
		0.549	2.35	
		0.547	2.32	
		0.547	2.33	
		0.546	2.30	
		0.549	2.28	
		0.511	2.06	
		0.537	2.10	
		0.538	2.21	
		0.542	2.30	
		0.550	2.33	
		0.549	2.35	
		0.551	2.40	

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.51 IMMERSION NO. = 5		RADIUS = 11.030		SLOPE = 11.17			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	16.71	12.34	545.43	43.01	730.36	534.07	0.666
45.00	16.69	12.33	545.23	42.75	729.61	535.77	0.665
75.00	16.69	12.34	545.76	43.06	729.31	532.86	0.665
105.00	16.68	12.32	545.26	43.26	729.55	531.30	0.665
135.00	16.59	12.28	544.15	43.30	726.80	528.95	0.663
165.00	16.30	12.36	539.06	43.86	694.29	500.61	0.634
195.00	16.30	12.49	543.88	42.72	684.52	502.90	0.622
225.00	16.43	12.40	547.12	43.58	706.03	511.46	0.641
255.00	16.64	12.45	550.28	43.59	718.58	520.46	0.651
285.00	16.86	12.41	547.62	43.35	735.51	534.85	0.670
315.00	16.68	12.33	544.96	42.79	728.25	534.42	0.664
345.00	16.70	12.34	545.49	42.98	729.60	533.77	0.665
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	634.60	498.20	136.40	14.33	551.21	0.503	1.64
45.00	634.60	495.26	139.34	14.58	553.59	0.505	1.64
75.00	634.60	497.95	136.66	14.38	550.11	0.501	1.63
105.00	634.60	499.97	134.64	14.22	548.09	0.500	1.63
135.00	634.60	498.45	136.15	14.43	546.19	0.498	1.62
165.00	634.60	481.07	153.53	17.05	523.62	0.478	1.54
195.00	634.60	464.39	170.21	18.70	530.93	0.482	1.55
225.00	634.60	486.71	147.89	16.13	532.41	0.483	1.56
255.00	634.60	495.45	139.15	14.97	538.74	0.488	1.59
285.00	634.60	504.90	129.71	13.63	550.35	0.501	1.64
315.00	634.60	494.71	139.90	14.67	552.43	0.504	1.64
345.00	634.60	497.40	137.20	14.42	551.12	0.502	1.64

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 2.20 IMMERISION NO. = 1		RADIUS = 17.130		SLOPE = 0.24			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
6.83	16.17	14.61	541.46	6.91	431.39	428.25	0.384
36.83	16.12	14.62	540.89	6.88	422.87	419.82	0.376
66.83	16.15	14.62	541.20	6.67	427.50	424.61	0.380
96.83	16.13	14.61	540.78	6.76	425.25	422.29	0.378
126.83	16.10	14.60	540.47	6.40	422.35	419.72	0.376
156.83	15.97	14.59	539.64	5.31	406.33	404.58	0.361
186.83	16.17	14.63	545.71	5.98	430.40	428.06	0.381
216.83	16.18	14.65	549.34	7.05	430.04	426.80	0.380
246.83	16.31	14.61	550.85	6.86	453.10	449.86	0.400
276.83	16.13	14.60	542.13	6.70	428.79	425.86	0.381
306.83	16.15	14.60	541.04	6.71	429.98	427.03	0.382
336.83	16.14	14.61	541.20	6.80	427.13	424.13	0.380

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
6.83	985.56	51.92	933.65	65.36	1027.18	0.913	2.07
36.83	985.56	50.66	934.90	65.82	1024.83	0.911	2.03
66.83	985.56	49.64	935.93	65.60	1027.74	0.914	2.05
96.83	985.56	50.05	935.51	65.71	1026.41	0.913	2.04
126.83	985.56	47.10	938.46	65.90	1028.04	0.914	2.02
156.83	985.56	37.62	947.95	65.89	1030.67	0.917	1.95
186.83	985.56	44.81	940.76	65.53	1033.57	0.915	2.05
216.83	985.56	52.75	932.81	65.41	1025.51	0.905	2.03
246.83	985.56	54.09	931.47	64.22	1034.41	0.913	2.14
276.83	985.56	50.01	935.55	65.53	1027.31	0.913	2.05
306.83	985.56	50.27	935.29	65.46	1028.17	0.914	2.06
336.83	985.56	50.61	934.96	65.60	1026.66	0.913	2.05

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 2.20 IMMERSION NO. = 3		RADIUS = 14.420		SLOPE = 1.13			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
29.00	15.94	14.30	534.97	5.05	442.55	440.83	0.396
59.00	15.94	14.31	535.08	5.12	441.98	440.22	0.396
89.00	15.95	14.31	535.08	4.91	443.44	441.81	0.397
119.00	15.94	14.29	534.77	4.80	443.71	442.16	0.397
149.00	15.87	14.32	534.56	4.66	432.13	430.70	0.387
179.00	15.71	14.36	533.42	5.22	402.84	401.17	0.360
209.00	15.82	14.33	540.52	5.22	426.11	424.34	0.379
239.00	15.95	14.31	541.60	5.38	446.11	444.14	0.397
269.00	15.93	14.27	538.97	4.93	447.34	445.69	0.399
299.00	15.95	14.29	535.18	5.12	444.86	443.08	0.398
329.00	15.94	14.30	535.13	5.05	443.40	441.68	0.397
359.00	15.93	14.30	535.08	5.14	442.56	440.78	0.396
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
29.00	829.64	32.98	790.66	60.86	905.25	0.811	2.30
59.00	829.64	39.41	790.23	60.88	904.58	0.810	2.30
89.00	829.64	37.97	791.68	60.84	906.61	0.812	2.31
119.00	829.64	37.09	792.55	60.84	907.55	0.813	2.31
149.00	829.64	35.13	794.52	61.54	903.75	0.809	2.25
179.00	829.64	36.63	793.01	63.17	888.71	0.795	2.10
209.00	829.64	38.79	790.85	61.78	897.50	0.798	2.19
239.00	829.64	41.84	787.80	60.59	904.38	0.805	2.29
269.00	829.64	38.42	791.22	60.61	908.12	0.810	2.30
299.00	829.64	39.70	789.95	60.71	905.73	0.811	2.31
329.00	829.64	39.03	790.61	60.81	905.62	0.811	2.30
359.00	829.64	39.67	789.98	60.84	904.63	0.810	2.30

Table XI. Circumferential Distortion Flow Survey Data; 70% Speed, Maximum Flow, IGV/Stator Schedule 40°/8° (Concluded).

PLANE NO. IMMERSION NO.	2.20 5	RADIUS = 11.775	SLOPE = 1.14										
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.						
18.56	16.19	14.21	541.30	9.09	488.06	481.94	0.436						
48.56	16.20	14.22	541.25	9.67	487.51	480.57	0.435						
78.56	16.19	14.22	541.51	9.94	486.14	478.84	0.434						
108.56	16.18	14.22	541.46	9.51	485.65	478.97	0.434						
138.56	16.12	14.24	541.04	9.57	475.65	469.03	0.424						
168.56	15.97	14.33	539.75	8.68	444.94	439.85	0.397						
198.56	15.78	14.30	539.07	7.66	424.27	420.49	0.378						
228.56	15.84	14.28	545.04	11.43	437.08	428.41	0.387						
258.56	16.18	14.20	547.99	9.47	491.15	484.46	0.436						
288.56	16.14	14.15	542.50	7.87	490.54	485.91	0.438						
318.56	16.19	14.20	541.56	8.81	488.71	482.95	0.436						
348.56	16.18	14.21	541.67	8.54	486.94	481.53	0.435						
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW						
18.56	677.47	77.07	500.39	51.25	769.89	0.688	1.47						
48.56	677.47	81.91	595.55	51.10	765.27	0.683	1.47						
78.56	677.47	83.92	593.55	51.11	762.62	0.681	1.46						
108.56	677.47	80.27	597.19	51.27	765.54	0.683	1.46						
138.56	677.47	79.09	598.37	51.91	760.29	0.678	1.43						
168.56	677.47	67.12	510.35	54.22	752.33	0.671	1.35						
198.56	677.47	56.52	420.95	55.90	749.92	0.668	1.28						
228.56	677.47	86.65	590.82	54.05	729.79	0.647	1.29						
258.56	677.47	30.77	596.69	50.93	768.60	0.682	1.46						
288.56	677.47	67.19	510.27	51.47	780.09	0.696	1.47						
318.56	677.47	74.83	502.64	51.29	772.28	0.690	1.47						
348.56	677.47	72.34	505.13	51.49	773.34	0.690	1.47						

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8°.

PLANE NO. IMMERSION NO. = 1		RADIUS = 17.415		SLOPE = -1.29			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.27	13.15	518.69	-1.03	379.50	379.44	0.344
15.00	14.25	13.16	518.69	-1.12	372.90	372.82	0.338
30.00	14.27	13.14	518.69	-0.60	381.34	381.32	0.346
45.00	14.26	13.12	518.69	-0.08	383.11	383.10	0.347
60.00	14.28	13.10	518.69	0.37	390.57	390.56	0.354
75.00	14.28	13.08	518.69	0.82	393.82	393.78	0.357
90.00	14.36	13.03	518.69	1.34	412.73	412.62	0.375
105.00	14.31	12.99	518.69	1.86	412.47	412.26	0.374
120.00	14.24	12.83	518.69	3.50	428.36	427.56	0.389
135.00	14.02	12.66	518.69	5.15	422.30	420.59	0.384
150.00	13.24	12.64	518.69	3.63	287.95	287.37	0.260
165.00	13.29	12.51	518.69	2.11	303.42	303.21	0.274
180.00	13.29	12.61	518.69	0.08	305.59	305.59	0.276
195.00	13.27	12.60	518.69	-1.95	301.70	301.53	0.272
210.00	13.26	12.63	518.69	-2.88	294.66	294.29	0.266
225.00	13.25	12.66	518.69	-3.82	285.08	284.45	0.257
240.00	14.24	12.79	518.69	-4.19	432.92	431.76	0.394
255.00	14.26	12.93	518.69	-4.56	414.79	413.48	0.377
270.00	14.24	12.99	518.69	-3.61	402.20	401.41	0.365
285.00	14.28	13.05	518.69	-2.66	397.20	396.77	0.360
300.00	14.28	13.09	518.69	-2.42	390.65	390.30	0.354
315.00	14.24	13.13	518.69	-2.19	377.42	377.14	0.342
330.00	14.26	13.14	518.69	-1.57	380.08	379.94	0.344
345.00	14.22	13.14	518.69	-0.95	372.99	372.93	0.338
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	1431.37	-6.85	1438.23	75.22	1487.44	1.348	1.25
15.00	1431.37	-7.29	1438.66	75.47	1486.18	1.346	1.23
30.00	1431.37	-3.99	1435.36	75.12	1485.15	1.346	1.26
45.00	1431.37	-0.53	1431.91	75.02	1482.27	1.343	1.26
60.00	1431.37	2.52	1428.85	74.71	1481.26	1.343	1.29
75.00	1431.37	5.64	1425.73	74.56	1479.12	1.341	1.30
90.00	1431.37	9.65	1421.72	73.82	1480.38	1.344	1.36
105.00	1431.37	13.39	1417.98	73.79	1476.70	1.341	1.35
120.00	1431.37	26.19	1405.18	73.08	1468.79	1.335	1.39
135.00	1431.37	37.91	1393.46	73.20	1455.56	1.322	1.35
150.00	1431.37	18.23	1413.14	78.51	1442.06	1.300	0.90
165.00	1431.37	11.17	1420.20	77.95	1452.21	1.310	0.95
180.00	1431.37	0.43	1430.94	77.95	1463.21	1.320	0.96
195.00	1431.37	-10.27	1441.64	78.19	1472.83	1.328	0.95
210.00	1431.37	-14.83	1446.20	78.50	1475.84	1.331	0.93
225.00	1431.37	-18.99	1450.36	78.90	1477.99	1.332	0.90
240.00	1431.37	-31.63	1463.00	73.56	1525.38	1.387	1.40
255.00	1431.37	-32.98	1464.35	74.23	1521.60	1.382	1.35
270.00	1431.37	-25.32	1456.70	74.59	1510.99	1.371	1.31
285.00	1431.37	-18.43	1449.80	74.69	1503.12	1.363	1.30
300.00	1431.37	-16.53	1447.90	74.91	1499.58	1.359	1.29
315.00	1431.37	-14.42	1445.79	75.38	1494.17	1.353	1.24
330.00	1431.37	-10.41	1441.78	75.24	1491.00	1.351	1.25
345.00	1431.37	-6.18	1437.56	75.46	1485.14	1.345	1.23

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.18		RADIUS = 13.300		SLOPE = -1.08			
IMMERSION NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS. FLOW ANGLE	ABS. VELOCITY	AXIAL VELOCITY	ABS. MACH NO.
0	14.31	12.91	518.69	-0.98	425.46	425.40	0.387
15.00	14.32	12.91	518.69	-0.46	425.60	425.59	0.387
30.00	14.33	12.90	518.69	-0.04	428.66	428.66	0.390
45.00	14.29	12.89	518.69	0.38	424.44	424.43	0.386
60.00	14.32	12.85	518.69	1.63	435.59	435.41	0.396
75.00	14.29	12.80	518.69	2.88	439.26	438.71	0.400
90.00	14.33	12.73	518.69	3.88	454.57	453.53	0.414
105.00	14.31	12.66	518.69	4.89	462.78	461.09	0.422
120.00	14.30	12.57	518.69	5.94	474.21	471.66	0.432
135.00	13.99	12.48	518.69	6.99	446.50	443.18	0.406
150.00	13.25	12.47	518.69	5.23	327.46	326.09	0.296
165.00	13.25	12.46	518.69	3.47	328.77	328.17	0.297
180.00	13.26	12.45	518.69	0.31	332.47	332.47	0.300
195.00	13.24	12.44	518.69	-2.84	330.01	329.61	0.298
210.00	13.27	12.50	518.69	-4.04	325.42	324.61	0.294
225.00	13.22	12.55	518.69	-5.23	304.95	303.68	0.275
240.00	14.28	12.61	518.69	-5.24	466.98	465.03	0.426
255.00	14.28	12.67	518.69	-4.44	457.04	455.13	0.416
270.00	14.34	12.74	518.69	-3.65	455.33	453.96	0.415
285.00	14.31	12.81	518.69	-3.01	440.80	439.91	0.401
300.00	14.32	12.84	518.69	-2.37	437.33	436.73	0.398
315.00	14.31	12.88	518.69	-1.94	430.15	429.78	0.391
330.00	14.33	12.89	518.69	-1.51	431.25	431.01	0.392
345.00	14.29	12.90	518.69		423.02	422.87	0.384

CIRC. POSITION	WHEEL SPEED	ABS. TANG. VELOCITY	REL. TANG. VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0	1093.15	-7.31	1100.47	68.87	1179.83	1.072	1.53
15.00	1093.15	-3.42	1095.57	68.79	1176.26	1.069	1.53
30.00	1093.15	-0.30	1093.45	68.59	1174.47	1.067	1.54
45.00	1093.15	2.61	1090.34	68.73	1170.03	1.063	1.52
60.00	1093.15	12.39	1080.76	68.06	1165.17	1.060	1.56
75.00	1093.15	22.07	1071.08	67.73	1157.44	1.053	1.57
90.00	1093.15	30.60	1062.35	66.88	1155.11	1.052	1.61
105.00	1093.15	39.45	1053.70	66.37	1150.17	1.048	1.63
120.00	1093.15	49.07	1044.08	65.69	1145.67	1.045	1.66
135.00	1093.15	54.34	1038.81	66.90	1129.40	1.028	1.55
150.00	1093.15	29.85	1063.30	72.95	1112.18	1.005	1.12
165.00	1093.15	19.90	1073.25	73.00	1122.30	1.014	1.13
180.00	1093.15	1.83	1091.32	73.06	1140.84	1.031	1.14
195.00	1093.15	-16.35	1109.50	73.45	1157.43	1.046	1.13
210.00	1093.15	-22.90	1116.05	73.78	1162.30	1.050	1.12
225.00	1093.15	-27.80	1120.95	74.84	1161.36	1.048	1.05
240.00	1093.15	-42.61	1132.76	67.73	1227.27	1.119	1.64
255.00	1093.15	-41.74	1134.89	68.15	1222.75	1.114	1.61
270.00	1093.15	-35.29	1128.44	68.09	1216.33	1.108	1.62
285.00	1093.15	-28.06	1121.21	68.58	1204.42	1.096	1.57
300.00	1093.15	-22.96	1116.12	68.63	1198.52	1.090	1.56
315.00	1093.15	-17.79	1110.94	68.85	1191.17	1.083	1.54
330.00	1093.15	-14.60	1107.75	68.74	1188.65	1.081	1.55
345.00	1093.15	-11.15	1104.30	69.05	1182.50	1.074	1.52

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.18		IMMERSION NO. = 5		RADIUS = 8.580		SLOPE = -0.33	
CIRC. POSITION	TOT. PRESSURE	STAT. PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.30	12.90	518.69	-0.62	426.55	426.53	0.388
15.00	14.28	12.91	518.59	0.42	421.62	421.61	0.383
30.00	14.32	12.90	518.69	1.40	428.22	428.10	0.389
45.00	14.30	12.88	518.69	2.38	427.72	427.35	0.389
60.00	14.29	12.83	518.69	3.95	435.18	434.14	0.396
75.00	14.24	12.77	518.69	5.53	436.67	434.64	0.397
90.00	14.32	12.70	518.69	6.55	457.97	454.98	0.417
105.00	14.31	12.63	518.69	7.57	467.66	463.58	0.426
120.00	14.27	12.56	518.69	9.04	472.69	466.81	0.431
135.00	14.05	12.48	518.69	10.52	454.69	447.05	0.414
150.00	13.27	12.49	518.69	7.31	327.85	325.18	0.296
165.00	13.27	12.49	518.69	4.11	326.97	326.13	0.295
180.00	13.26	12.49	518.69	1.48	325.68	325.57	0.294
195.00	13.26	12.49	518.69	-1.16	324.69	324.62	0.293
210.00	13.30	12.52	518.69	-4.62	324.83	323.78	0.293
225.00	13.26	12.56	518.69	-6.08	309.72	306.64	0.279
240.00	14.27	12.61	518.69	-7.69	464.58	460.40	0.423
255.00	14.31	12.66	518.69	-7.30	462.82	459.07	0.422
270.00	14.33	12.72	518.69	-6.32	456.00	453.23	0.415
285.00	14.31	12.78	518.69	-5.34	444.36	442.43	0.404
300.00	14.30	12.83	518.69	-4.20	436.33	435.16	0.397
315.00	14.29	12.87	518.69	-3.06	428.16	427.55	0.389
330.00	14.31	12.88	518.69	-2.36	430.31	429.95	0.391
345.00	14.28	12.89	518.69	-1.66	424.36	424.18	0.386

CIRC. POSITION	WHEEL SPEED	ABS TANG. VELOCITY	REL. TANG. VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	705.21	-4.62	709.82	59.00	828.11	0.753	0.94
15.00	705.21	3.08	702.12	59.02	818.97	0.744	0.93
30.00	705.21	10.46	694.74	58.36	816.05	0.742	0.93
45.00	705.21	17.76	687.44	58.13	809.45	0.736	0.94
60.00	705.21	30.02	675.19	57.26	802.72	0.730	0.96
75.00	705.21	42.08	663.13	56.76	792.87	0.721	0.95
90.00	705.21	52.24	652.97	55.13	795.85	0.725	0.99
105.00	705.21	61.61	643.60	54.23	793.18	0.723	1.01
120.00	705.21	74.31	630.89	53.50	784.82	0.716	1.01
135.00	705.21	83.02	622.19	54.30	766.14	0.698	0.96
150.00	705.21	41.74	663.46	63.89	738.87	0.667	0.69
165.00	705.21	23.43	681.77	64.44	755.76	0.683	0.69
180.00	705.21	8.38	696.82	64.96	769.13	0.695	0.69
195.00	705.21	-6.57	711.78	65.48	782.51	0.706	0.69
210.00	705.21	-26.16	731.37	66.12	799.83	0.722	0.69
225.00	705.21	-43.53	748.74	67.73	809.10	0.730	0.65
240.00	705.21	-62.17	767.37	59.04	894.59	0.816	1.00
255.00	705.21	-58.81	764.01	59.00	891.33	0.812	1.00
270.00	705.21	-50.20	755.40	59.04	880.94	0.802	0.99
285.00	705.21	-41.36	746.56	59.35	867.81	0.790	0.97
300.00	705.21	-31.96	737.16	59.45	856.02	0.778	0.96
315.00	705.21	-22.86	728.06	59.58	844.32	0.767	0.94
330.00	705.21	-17.72	722.93	59.26	841.12	0.765	0.95
345.00	705.21	-12.29	717.50	59.41	833.51	0.757	0.94

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95		RADIUS = 17.420		SLOPE = -1.91			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
26.70	14.25	11.45	518.69	41.01	614.41	463.63	0.568
56.70	14.16	11.39	518.69	42.29	612.69	453.24	0.566
86.70	14.17	11.45	518.69	42.19	606.52	449.39	0.560
116.70	14.21	11.40	518.69	42.34	616.68	455.82	0.570
146.70	14.20	11.37	518.69	43.64	620.15	448.80	0.573
176.70	13.26	10.90	518.69	43.93	583.28	420.07	0.537
206.70	13.16	10.87	518.69	42.32	576.15	426.00	0.530
236.70	13.29	11.10	518.69	36.65	559.18	448.63	0.514
266.70	12.73	11.51	518.69	29.01	419.59	366.94	0.381
296.70	13.41	11.59	518.69	44.15	503.78	361.47	0.461
326.70	14.14	11.47	518.69	42.04	604.46	448.92	0.558
356.70	14.20	11.40	518.69	41.38	615.85	462.10	0.569
CIRC. POSITION	WHEEL SPEED	ARS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
26.70	1431.78	403.17	1025.61	65.74	1128.27	1.042	2.50
56.70	1431.78	412.27	1019.51	66.03	1115.72	1.031	2.43
86.70	1431.78	407.34	1024.45	66.31	1118.68	1.033	2.42
116.70	1431.78	415.35	1016.43	65.85	1113.96	1.029	2.45
146.70	1431.78	427.98	1003.80	65.91	1099.56	1.016	2.40
176.70	1431.78	404.67	1027.11	67.76	1109.69	1.022	2.14
206.70	1431.78	387.90	1043.88	67.80	1127.46	1.038	2.16
236.70	1431.78	333.79	1097.99	67.78	1186.11	1.090	2.32
266.70	1431.78	203.48	1228.30	73.37	1281.94	1.164	1.92
296.70	1431.78	350.90	1080.88	71.51	1139.72	1.042	1.93
326.70	1431.78	404.77	1027.01	66.39	1120.84	1.034	2.42
356.70	1431.78	407.11	1024.67	65.73	1124.05	1.039	2.48

Table XII. Circumferential Distortion: Flow Survey Data; 100% speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95		RADIUS = 13.797		SLOPE = 4.55			
IMMERSION NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.10	14.31	10.62	518.69	40.10	711.68	544.38	0.665
30.10	14.31	10.65	518.69	40.36	708.41	539.80	0.662
60.10	14.31	10.60	518.69	39.49	714.11	551.10	0.667
90.10	14.31	10.62	518.69	39.71	711.65	547.47	0.665
120.10	14.31	10.60	518.69	40.20	714.21	545.51	0.668
150.10	14.30	10.58	518.69	41.57	715.49	535.29	0.669
180.10	13.27	10.08	518.69	40.96	685.13	517.39	0.638
210.10	13.26	10.06	518.69	38.42	685.71	537.24	0.639
240.10	13.23	10.30	518.69	36.33	654.63	527.38	0.608
270.10	14.28	10.65	518.69	38.02	707.17	550.97	0.660
300.10	14.29	10.65	518.69	40.82	707.98	535.78	0.661
330.10	14.30	10.61	518.69	40.42	711.67	541.95	0.665
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.10	1134.00	458.41	675.59	51.14	867.62	0.811	2.98
30.10	1134.00	458.76	675.25	51.36	864.49	0.807	2.97
60.10	1134.00	454.13	679.87	50.97	875.16	0.818	3.02
90.10	1134.00	454.65	679.32	51.13	872.47	0.815	3.00
120.10	1134.00	460.99	673.01	50.97	866.33	0.810	2.99
150.10	1134.00	474.75	659.25	50.92	849.20	0.794	2.93
180.10	1134.00	449.13	684.88	52.93	858.34	0.799	2.67
210.10	1134.00	426.11	707.89	52.80	888.67	0.828	2.77
240.10	1134.00	387.83	746.17	54.75	913.73	0.848	2.77
270.10	1134.00	443.31	690.69	51.42	883.23	0.825	3.02
300.10	1134.00	462.60	671.20	51.40	858.82	0.802	2.94
330.10	1134.00	461.56	672.44	51.13	863.55	0.807	2.97

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95		RADIUS = 9.910		SLOPE = 15.45			
IMMERSION NO. = 5							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
21.60	14.25	10.48	518.69	36.42	707.29	569.15	0.662
51.60	14.30	10.46	518.69	36.55	713.27	572.99	0.668
81.60	14.31	10.45	518.69	36.48	714.55	574.55	0.669
111.60	14.31	10.46	518.69	37.14	713.10	568.46	0.668
141.60	14.29	10.38	518.69	38.26	720.91	566.06	0.676
171.60	13.80	10.10	518.69	40.52	714.12	542.86	0.669
201.60	13.27	9.83	518.69	34.64	698.60	574.76	0.653
231.60	13.28	10.17	518.69	32.23	699.30	557.71	0.613
261.60	14.26	10.55	518.69	32.79	698.81	587.46	0.653
291.60	14.32	10.56	518.69	36.65	703.91	564.74	0.658
321.60	14.28	10.42	518.69	36.81	715.81	573.10	0.671
351.60	14.30	10.45	518.69	36.40	713.56	574.34	0.668
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
21.60	814.52	419.92	394.60	34.73	692.56	0.648	2.02
51.60	814.52	424.77	389.75	34.22	692.99	0.649	2.03
81.60	814.52	424.83	389.69	34.15	694.23	0.650	2.04
111.60	814.52	430.55	383.98	34.04	685.99	0.642	2.02
141.60	814.52	446.41	368.11	33.04	675.23	0.633	2.00
171.60	814.52	463.97	350.55	32.85	646.20	0.605	1.86
201.60	814.52	397.09	417.43	35.99	710.35	0.664	1.91
231.60	814.52	351.62	462.91	39.69	724.79	0.674	1.90
261.60	814.52	378.45	436.07	36.59	731.62	0.684	2.10
291.60	814.52	420.18	394.34	34.93	688.80	0.646	2.02
321.60	814.52	428.69	385.63	33.94	690.76	0.647	2.03
351.60	814.52	423.44	391.08	34.25	694.85	0.651	2.04

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow.
IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.21		RADIUS = 17.081		SLOPE = -0.93			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	19.25	13.98	575.69	49.00	795.65	522.00	0.710
45.00	19.29	14.03	577.38	49.15	795.07	520.04	0.708
75.00	19.28	14.00	556.86	48.95	789.26	518.32	0.709
105.00	19.27	14.00	576.52	48.48	795.51	527.33	0.709
135.00	19.22	13.91	573.99	49.12	798.21	522.41	0.713
165.00	19.28	14.13	571.73	52.94	764.57	460.77	0.682
195.00	21.07	14.66	606.16	52.85	947.15	511.60	0.739
225.00	21.40	14.42	607.47	53.78	882.83	521.65	0.773
255.00	21.18	14.14	610.30	51.80	894.16	552.95	0.782
285.00	19.28	14.00	577.41	49.97	796.94	512.59	0.710
315.00	19.63	13.99	577.76	49.22	800.13	522.61	0.712
345.00	19.67	14.02	578.42	49.08	801.38	524.91	0.713
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	1403.92	600.49	303.43	56.99	958.11	0.854	2.63
45.00	1403.92	601.41	302.51	57.06	956.28	0.851	2.62
75.00	1403.92	595.21	308.71	57.34	960.56	0.863	2.65
105.00	1403.92	595.62	308.30	56.88	955.11	0.860	2.65
135.00	1403.92	603.52	300.40	56.87	955.80	0.854	2.62
165.00	1403.92	610.13	793.79	59.87	917.83	0.818	2.34
195.00	1403.92	675.23	728.69	54.93	890.35	0.777	2.58
225.00	1403.92	712.23	591.69	52.98	866.35	0.758	2.61
255.00	1403.92	702.68	701.24	51.74	893.03	0.781	2.71
285.00	1403.92	610.23	793.69	57.14	944.82	0.841	2.57
315.00	1403.92	605.88	798.04	56.78	953.94	0.849	2.62
345.00	1403.92	605.54	798.37	56.68	955.47	0.850	2.64

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.51		RADIUS = 14.056		SLOPE = 3.14			
IMMERSION NO. = 3							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	18.43	12.91	561.10	50.16	807.58	517.38	0.732
45.00	18.47	12.94	560.61	50.25	806.36	515.62	0.731
75.00	18.50	12.92	562.24	50.40	810.91	516.89	0.734
105.00	18.41	12.93	560.09	50.56	803.82	510.64	0.729
135.00	18.38	12.87	561.57	50.93	807.46	508.92	0.731
165.00	18.05	13.02	555.60	53.35	770.68	460.04	0.699
195.00	19.03	13.46	577.58	54.80	808.26	465.91	0.721
225.00	18.81	12.99	578.36	52.89	834.63	503.57	0.746
255.00	19.34	13.03	586.02	51.68	866.98	537.57	0.773
285.00	18.44	12.93	559.80	49.61	805.06	521.67	0.730
315.00	18.38	12.89	561.24	50.39	806.35	514.10	0.730
345.00	18.47	12.91	561.87	50.06	809.76	519.85	0.733
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	1155.29	620.09	535.20	45.97	744.39	0.674	2.75
45.00	1155.29	619.96	535.33	46.07	743.26	0.674	2.75
75.00	1155.29	624.81	530.48	45.74	740.66	0.671	2.75
105.00	1155.29	620.78	534.51	46.31	739.23	0.670	2.72
135.00	1155.29	626.89	528.40	46.08	733.62	0.664	2.70
165.00	1155.29	618.32	536.97	49.41	707.09	0.641	2.47
195.00	1155.29	660.46	494.83	46.72	679.65	0.606	2.50
225.00	1155.29	665.60	489.69	44.20	702.41	0.628	2.62
255.00	1155.29	680.20	475.09	41.47	717.42	0.640	2.79
285.00	1155.29	613.17	542.12	46.10	752.35	0.682	2.78
315.00	1155.29	621.21	534.07	46.09	741.30	0.671	2.73
345.00	1155.29	620.66	534.43	45.79	745.56	0.675	2.76

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.21		RADIUS = 11.030		SLOPE = 11.17			
IMMERSION NO. = 5							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	19.25	13.12	570.18	46.62	851.73	585.00	0.770
45.00	19.61	13.14	570.88	46.60	853.45	586.40	0.771
75.00	19.61	13.13	571.35	46.62	854.66	587.01	0.772
105.00	19.29	13.09	563.10	47.43	854.75	578.23	0.774
135.00	19.49	13.06	567.98	47.50	851.28	575.12	0.771
165.00	19.62	12.95	555.62	49.10	833.83	545.94	0.755
195.00	18.66	12.75	570.19	49.15	833.88	545.42	0.752
225.00	18.88	12.78	573.56	49.18	850.13	555.72	0.761
255.00	19.64	13.14	583.89	47.62	864.61	582.78	0.773
285.00	19.63	13.03	562.32	47.17	861.46	585.64	0.781
315.00	19.65	13.15	572.28	47.06	856.31	583.34	0.773
345.00	19.26	13.11	570.78	46.95	853.86	582.88	0.772
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	906.28	619.05	287.53	26.17	651.84	0.589	1.87
45.00	906.28	620.10	286.48	26.04	652.63	0.590	1.88
75.00	906.28	621.18	285.40	25.93	652.71	0.590	1.88
105.00	906.28	629.48	277.10	25.60	641.19	0.581	1.85
135.00	906.28	627.63	278.94	25.67	639.20	0.579	1.84
165.00	906.28	630.25	276.32	26.85	611.89	0.554	1.73
195.00	906.28	630.76	275.81	26.82	611.19	0.551	1.69
225.00	906.28	643.35	263.23	25.35	614.91	0.551	1.70
255.00	906.28	638.68	267.90	24.69	641.41	0.573	1.83
285.00	906.28	631.77	274.80	25.14	646.91	0.586	1.87
315.00	906.28	626.67	279.70	25.62	646.93	0.584	1.87
345.00	906.28	623.96	282.61	25.87	647.78	0.586	1.86

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. IMMERSION NO. = 2.20 3		RADIUS = 14.420		SLOPE = 1.13			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
29.00	18.07	15.61	560.39	3.13	525.23	524.45	0.462
59.00	18.09	15.59	560.39	2.68	523.70	528.12	0.465
89.00	18.10	15.58	560.96	2.45	531.46	530.97	0.467
119.00	18.08	15.60	561.38	2.76	528.28	527.66	0.464
149.00	18.00	15.72	560.29	4.90	504.96	503.11	0.444
179.00	17.86	15.80	558.78	5.17	480.28	476.33	0.422
209.00	18.39	15.59	569.47	4.49	561.75	560.02	0.492
239.00	18.25	15.56	573.57	6.65	553.95	550.23	0.483
269.00	18.20	15.63	575.74	4.16	570.12	568.62	0.496
299.00	17.95	15.51	560.39	4.60	524.62	522.93	0.461
329.00	18.18	15.59	561.58	4.18	538.04	536.61	0.473
359.00	18.06	15.61	560.44	3.70	525.00	523.91	0.462
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
29.00	1185.21	28.70	1155.50	65.61	1269.86	1.117	2.88
59.00	1185.21	24.76	1160.44	65.53	1274.97	1.122	2.90
89.00	1185.21	22.69	1162.52	65.45	1278.04	1.124	2.91
119.00	1185.21	25.58	1159.63	65.53	1274.03	1.120	2.89
149.00	1185.21	43.17	1142.03	66.22	1247.95	1.096	2.78
179.00	1185.21	43.28	1141.93	67.27	1238.06	1.087	2.65
209.00	1185.21	44.02	1141.18	63.86	1271.19	1.112	3.04
239.00	1185.21	64.14	1121.07	63.86	1245.51	1.088	2.96
269.00	1185.21	41.33	1143.87	63.57	1277.41	1.112	3.07
299.00	1185.21	42.03	1143.17	65.42	1257.10	1.106	2.86
329.00	1185.21	39.21	1145.99	64.91	1265.40	1.113	2.95
359.00	1185.21	33.87	1151.34	65.53	1264.93	1.113	2.88

Table XII. Circumferential Distortion Flow Survey Data; 100% Speed, Intermediate Flow, IGV/Stator Schedule 40°/8° (Concluded).

PLANE NO. = 2.20 IMMERSION NO. = 5		RADIUS = 11.775		SLOPE = 1.14			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
18.56	17.92	15.68	566.20	11.60	503.97	493.68	0.440
48.56	17.94	15.69	565.84	12.88	505.74	493.01	0.442
78.56	17.94	15.68	566.36	14.35	506.48	490.68	0.442
108.56	17.90	15.68	566.46	16.05	502.37	482.79	0.439
138.56	17.77	15.67	565.89	14.82	489.87	473.58	0.428
168.56	17.43	15.76	563.87	13.06	438.18	426.85	0.382
198.56	16.42	15.70	558.06	28.40	293.04	257.77	0.255
228.56	16.32	15.74	574.50	39.70	266.54	205.07	0.228
258.56	16.32	15.67	580.67	23.42	283.88	260.50	0.242
288.56	17.80	15.49	573.51	14.54	517.99	501.39	0.450
318.56	17.83	15.55	564.85	13.92	497.85	483.23	0.435
348.56	17.91	15.66	565.21	7.71	505.10	500.53	0.442

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
18.56	967.81	101.30	366.51	60.33	997.28	0.871	1.59
48.56	967.81	112.75	855.05	60.03	987.00	0.863	1.59
78.56	967.81	125.52	842.29	59.78	974.79	0.851	1.58
108.56	967.81	138.89	828.92	59.78	959.27	0.838	1.55
138.56	967.81	125.30	842.51	60.66	966.49	0.844	1.52
168.56	967.81	99.02	868.79	63.83	967.98	0.843	1.37
198.56	967.81	139.40	828.41	72.72	867.59	0.754	0.82
228.56	967.81	170.26	797.55	75.58	823.49	0.704	0.63
258.56	967.81	112.63	854.98	73.05	893.78	0.761	0.79
288.56	967.81	130.09	837.72	59.10	976.31	0.848	1.58
318.56	967.81	119.77	848.03	60.32	976.05	0.853	1.55
348.56	967.81	67.79	900.02	60.92	1029.84	0.900	1.61

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8°.

PLANE NO. = 0.14 IMMERSION NO. = 1		RADIUS = 17.415		SLOPE = -1.29			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.22	14.02	518.69	0.18	249.06	249.06	0.224
15.00	14.21	14.02	518.69	0.28	246.17	246.17	0.222
30.00	14.21	14.02	518.69	0.68	246.97	246.95	0.222
45.00	14.21	14.01	518.69	1.08	249.91	249.87	0.225
60.00	14.22	13.99	518.69	0.77	255.98	255.96	0.230
75.00	14.23	13.97	518.69	0.47	263.28	263.27	0.237
90.00	14.23	13.97	518.69	1.03	263.56	263.51	0.237
105.00	14.25	13.96	518.69	1.58	269.51	269.41	0.243
120.00	14.21	13.99	518.69	3.03	276.97	276.58	0.250
135.00	14.39	13.82	518.69	4.49	268.41	267.59	0.242
150.00	14.10	13.82	518.69	3.25	189.42	189.11	0.170
165.00	14.11	13.82	518.69	2.01	189.61	189.50	0.170
180.00	14.12	13.82	518.69	0.00	193.97	193.96	0.174
195.00	14.10	13.82	518.69	-0.80	190.15	190.13	0.171
210.00	14.11	13.83	518.69	-1.05	187.84	187.81	0.169
225.00	14.11	13.84	518.69	-1.29	182.49	182.45	0.164
240.00	14.21	13.90	518.69	-2.16	277.03	277.03	0.250
255.00	14.22	13.95	518.69	-3.03	267.36	266.99	0.241
270.00	14.20	13.96	518.69	-2.14	259.09	258.91	0.233
285.00	14.23	13.98	518.69	-1.25	263.06	262.99	0.237
300.00	14.21	14.00	518.69	-0.80	250.86	250.84	0.226
315.00	14.22	14.02	518.69	-0.35	246.89	246.88	0.222
330.00	14.20	14.02	518.69	-0.13	243.98	243.98	0.220
345.00	14.21	14.02	518.69	0.08	244.72	244.72	0.220

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	1001.96	0.78	1001.18	76.03	1031.69	0.928	0.87
15.00	1001.96	1.20	1000.76	76.18	1030.59	0.927	0.86
30.00	1001.96	2.93	999.03	76.12	1029.10	0.926	0.86
45.00	1001.96	4.71	997.25	75.93	1028.08	0.925	0.87
60.00	1001.96	3.46	998.50	75.62	1030.78	0.928	0.89
75.00	1001.96	2.16	999.80	75.25	1033.88	0.931	0.91
90.00	1001.96	4.71	997.25	75.20	1031.47	0.929	0.91
105.00	1001.96	7.43	994.53	74.84	1030.37	0.928	0.93
120.00	1001.96	14.66	987.30	74.35	1025.31	0.924	0.95
135.00	1001.96	21.01	980.95	74.74	1016.79	0.916	0.92
150.00	1001.96	10.74	991.22	79.20	1009.10	0.906	0.65
165.00	1001.96	6.65	995.31	79.22	1013.19	0.910	0.65
180.00	1001.96	2.05	999.91	79.02	1018.55	0.915	0.66
195.00	1001.96	-2.65	1004.61	78.28	1022.45	0.918	0.65
210.00	1001.96	-3.43	1005.39	79.42	1022.78	0.918	0.64
225.00	1001.96	-4.11	1003.07	79.72	1022.48	0.918	0.62
240.00	1001.96	-10.45	1012.41	74.70	1049.53	0.946	0.96
255.00	1001.96	-14.13	1016.09	75.28	1050.58	0.946	0.92
270.00	1001.96	-9.67	1011.63	75.64	1044.24	0.940	0.90
285.00	1001.96	-5.74	1007.70	75.37	1041.45	0.938	0.91
300.00	1001.96	-3.50	1005.46	75.99	1036.28	0.933	0.87
315.00	1001.96	-1.51	1003.47	76.18	1033.39	0.930	0.86
330.00	1001.96	-0.57	1002.53	76.32	1031.80	0.928	0.85
345.00	1001.96	0.34	1001.62	76.27	1031.08	0.928	0.85

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.18 IMMERSION NO. = 3		RADIUS = 13,300		SLOPE = -1.08			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0	14.24	13.90	518.69	-0.10	283.58	283.58	0.256
15.00	14.24	13.89	518.69	0.40	284.57	284.57	0.256
30.00	14.25	13.89	518.69	0.93	287.58	287.54	0.259
45.00	14.23	13.88	518.69	1.45	285.00	284.91	0.257
60.00	14.25	13.88	518.69	1.62	288.64	288.52	0.260
75.00	14.24	13.87	518.69	1.80	288.26	288.12	0.260
90.00	14.26	13.84	518.69	2.58	297.80	297.50	0.269
105.00	14.24	13.81	518.69	3.36	301.81	301.29	0.272
120.00	14.24	13.78	518.69	4.43	306.59	305.67	0.277
135.00	14.24	13.75	518.69	5.50	286.23	284.91	0.258
150.00	14.09	13.75	518.69	3.72	212.46	212.01	0.191
165.00	14.11	13.75	518.69	1.94	209.71	209.59	0.188
180.00	14.11	13.74	518.69	-0.14	215.53	215.53	0.194
195.00	14.10	13.74	518.69	-2.23	214.00	213.84	0.192
210.00	14.11	13.76	518.69	-2.86	211.36	211.10	0.190
225.00	14.10	13.78	518.69	-3.50	201.05	200.68	0.181
240.00	14.24	13.81	518.69	-4.03	302.20	301.46	0.273
255.00	14.23	13.83	518.69	-4.56	296.03	295.10	0.267
270.00	14.26	13.85	518.69	-3.57	296.67	296.10	0.268
285.00	14.25	13.88	518.69	-2.58	288.84	288.55	0.260
300.00	14.24	13.90	518.69	-1.91	282.89	282.74	0.255
315.00	14.24	13.92	518.69	-1.23	277.46	277.40	0.250
330.00	14.25	13.91	518.69	-0.91	281.14	281.10	0.253
345.00	14.23	13.90	518.69	-0.59	279.41	279.40	0.252

CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0	765.21	-0.47	765.68	69.68	816.50	0.736	1.08
15.00	765.21	1.99	763.22	69.55	814.54	0.734	1.08
30.00	765.21	4.64	760.56	69.29	813.10	0.733	1.09
45.00	765.21	7.21	757.99	69.40	809.77	0.730	1.08
60.00	765.21	8.19	757.02	69.14	810.14	0.730	1.10
75.00	765.21	9.05	756.15	69.14	809.18	0.729	1.10
90.00	765.21	13.41	751.80	68.41	808.52	0.729	1.13
105.00	765.21	17.69	747.52	68.05	805.95	0.727	1.14
120.00	765.21	23.68	741.52	67.60	802.06	0.724	1.16
135.00	765.21	27.43	737.77	68.88	790.87	0.713	1.07
150.00	765.21	13.78	751.42	74.24	780.76	0.702	0.79
165.00	765.21	7.10	758.11	74.55	786.55	0.707	0.78
180.00	765.21	-0.55	765.75	74.26	795.51	0.715	0.81
195.00	765.21	-8.33	773.53	74.55	802.55	0.721	0.80
210.00	765.21	-10.56	775.77	74.78	803.98	0.722	0.79
225.00	765.21	-12.27	777.48	75.53	802.96	0.721	0.75
240.00	765.21	-21.24	786.44	69.03	842.24	0.760	1.14
255.00	765.21	-23.54	788.74	69.49	842.14	0.759	1.12
270.00	765.21	-18.47	783.68	69.30	837.75	0.755	1.12
285.00	765.21	-13.00	778.21	69.66	829.98	0.748	1.10
300.00	765.21	-9.40	774.61	69.95	824.60	0.743	1.08
315.00	765.21	-5.96	771.16	70.22	819.54	0.738	1.06
330.00	765.21	-4.47	769.67	69.94	819.40	0.738	1.07
345.00	765.21	-2.68	768.08	70.01	817.32	0.736	1.06

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.13 IMMERISION NO. = 5		RADIUS = 8.580		SLOPE = -0.33			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.	14.23	13.89	518.69	0.55	281.68	281.67	0.254
15.00	14.23	13.89	518.69	1.65	281.05	280.94	0.253
30.00	14.23	13.89	518.69	2.41	282.92	282.67	0.255
45.00	14.23	13.89	518.69	3.17	282.27	281.84	0.254
60.00	14.22	13.93	518.69	3.48	271.65	271.15	0.245
75.00	14.21	13.97	518.69	3.79	258.90	258.33	0.233
90.00	14.23	13.89	518.69	4.90	283.54	282.50	0.256
105.00	14.24	13.80	518.69	6.02	304.22	302.54	0.274
120.00	14.22	13.77	518.69	7.75	305.33	302.55	0.275
135.00	14.39	13.74	518.69	9.47	287.18	283.26	0.259
150.00	14.13	13.74	518.69	6.62	214.03	212.60	0.192
165.00	14.10	13.75	518.69	3.78	210.33	209.87	0.189
180.00	14.10	13.75	518.69	1.40	212.96	212.90	0.191
195.00	14.10	13.75	518.69	-0.98	212.11	212.09	0.191
210.00	14.12	13.76	518.69	-3.28	212.60	212.26	0.191
225.00	14.10	13.76	518.69	-5.58	202.00	201.04	0.181
240.00	14.22	13.81	518.69	-6.13	299.25	297.53	0.270
255.00	14.24	13.83	518.69	-6.69	297.77	295.74	0.269
270.00	14.24	13.85	518.69	-5.55	293.90	292.52	0.265
285.00	14.24	13.87	518.69	-4.41	289.99	289.13	0.261
300.00	14.23	13.86	518.69	-2.89	282.87	282.51	0.255
315.00	14.23	13.90	518.69	-1.37	280.36	280.28	0.253
330.00	14.23	13.90	518.69	-0.96	281.18	281.14	0.253
345.00	14.22	13.89	518.69	-0.55	279.78	279.77	0.252
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.	493.64	2.70	490.94	60.16	566.00	0.510	0.66
15.00	493.64	8.09	485.55	59.95	560.97	0.505	0.66
30.00	493.64	11.90	481.75	59.60	538.56	0.503	0.66
45.00	493.64	15.61	478.03	59.48	554.93	0.500	0.66
60.00	493.64	16.49	477.16	60.39	548.82	0.494	0.64
75.00	493.64	17.11	476.53	61.54	542.05	0.488	0.61
90.00	493.64	24.24	469.40	58.96	547.85	0.494	0.66
105.00	493.64	31.91	461.74	56.77	552.03	0.498	0.71
120.00	493.64	41.15	452.50	56.23	544.32	0.491	0.70
135.00	493.64	47.25	446.39	57.60	528.68	0.477	0.64
150.00	493.64	24.69	468.95	65.61	514.89	0.463	0.49
165.00	493.64	13.87	479.78	66.37	523.67	0.471	0.48
180.00	493.64	5.20	488.44	66.45	532.92	0.479	0.49
195.00	493.64	-3.63	497.27	66.90	540.61	0.486	0.49
210.00	493.64	-12.16	505.81	67.24	548.54	0.493	0.49
225.00	493.64	-19.64	513.29	68.61	551.25	0.495	0.46
240.00	493.64	-31.98	523.63	60.49	605.99	0.545	0.69
255.00	493.64	-34.69	528.33	60.76	605.48	0.546	0.69
270.00	493.64	-28.42	522.07	60.74	598.44	0.540	0.68
285.00	493.64	-22.30	515.94	60.73	591.43	0.533	0.68
300.00	493.64	-14.26	507.91	60.92	581.19	0.524	0.66
315.00	493.64	-6.70	500.35	60.74	573.50	0.517	0.66
330.00	493.64	-4.71	498.36	60.57	572.19	0.516	0.66
345.00	493.64	-2.69	496.33	60.59	569.75	0.513	0.65

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 0.95		RADIUS = 17.420		SLOPE = -1.91			
IMMERSION NO. = 1							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
26.70	14.48	13.33	518.69	41.72	382.80	285.73	0.347
56.70	14.26	13.57	518.69	38.97	295.23	229.53	0.266
86.70	14.47	13.64	518.69	41.37	323.23	242.57	0.292
116.70	14.48	13.62	518.69	42.79	329.79	242.01	0.298
146.70	14.49	13.60	518.69	44.14	334.43	240.00	0.302
176.70	14.08	13.39	518.69	43.04	299.09	218.60	0.270
206.70	14.05	13.47	518.69	43.85	272.82	196.75	0.246
236.70	14.15	13.58	518.69	34.73	270.40	222.22	0.244
266.70	14.48	13.76	518.69	42.39	299.97	221.55	0.271
296.70	14.46	13.70	518.69	43.89	308.57	222.37	0.278
326.70	14.49	13.70	518.69	42.50	315.37	232.52	0.285
356.70	14.48	13.64	518.69	41.77	325.93	243.09	0.294
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
26.70	1002.25	254.75	747.49	69.08	500.24	0.725	1.72
56.70	1002.25	185.67	816.58	74.30	848.22	0.765	1.40
86.70	1002.25	213.63	788.62	72.90	825.08	0.745	1.49
116.70	1002.25	224.03	778.22	72.73	814.98	0.736	1.48
146.70	1002.25	232.90	769.35	72.67	805.91	0.728	1.47
176.70	1002.25	204.13	798.12	74.68	827.51	0.746	1.31
206.70	1002.25	189.00	813.24	76.40	836.70	0.754	1.19
236.70	1002.25	154.05	848.20	75.32	876.83	0.790	1.35
266.70	1002.25	202.23	800.02	74.52	830.13	0.749	1.37
296.70	1002.25	213.92	788.33	74.25	819.09	0.739	1.37
326.70	1002.25	213.06	789.18	73.58	822.73	0.743	1.43
356.70	1002.25	217.11	785.13	72.80	821.90	0.742	1.49

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO., IMMERSION NO. = 3		RADIUS = 13.797		SLOPE = 4.35			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
0.10	14.24	13.03	518.69	39.19	438.26	339.67	0.399
30.10	14.24	13.04	518.69	39.14	435.84	338.04	0.396
60.10	14.25	13.03	518.69	39.51	439.07	338.75	0.399
90.10	14.24	13.05	518.69	38.98	435.21	338.32	0.396
120.10	14.25	13.01	513.69	39.20	441.12	341.84	0.401
150.10	14.24	12.96	513.69	41.67	448.42	334.97	0.408
180.10	14.12	12.86	518.69	38.50	404.99	316.95	0.368
210.10	14.11	12.95	518.69	36.99	389.04	310.75	0.353
240.10	14.13	13.10	518.69	34.07	363.40	301.02	0.329
270.10	14.24	13.11	518.69	39.17	425.08	329.55	0.386
300.10	14.24	13.06	518.69	39.48	432.71	333.99	0.393
330.10	14.25	13.06	518.69	37.97	433.33	341.61	0.394
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
0.10	793.80	276.93	516.87	56.69	618.49	0.563	2.16
30.10	793.80	275.11	518.69	56.91	619.12	0.563	2.16
60.10	793.80	279.34	514.46	55.64	615.97	0.560	2.16
90.10	793.80	273.77	520.03	56.95	620.40	0.564	2.16
120.10	793.80	278.80	515.00	56.42	618.13	0.562	2.18
150.10	793.80	298.13	495.67	55.95	598.24	0.545	2.13
180.10	793.80	252.11	541.69	59.67	627.50	0.570	1.98
210.10	793.80	234.08	559.72	60.96	640.20	0.580	1.95
240.10	793.80	203.58	590.22	62.98	662.55	0.600	1.91
270.10	793.80	268.49	525.31	57.90	620.13	0.564	2.11
300.10	793.80	275.12	519.68	57.22	616.91	0.561	2.13
330.10	793.80	266.61	527.19	57.06	628.20	0.571	2.18

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. IMMERSION NO. = 0.95		RADIUS = 9.910		SLOPE = 15.45			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
21.60	14.24	12.87	518.69	35.78	451.31	366.14	0.411
51.60	14.24	12.86	518.69	36.37	452.88	364.66	0.413
81.60	14.24	12.87	518.69	35.91	451.33	365.55	0.411
111.60	14.24	12.84	518.69	36.38	456.60	367.61	0.416
141.60	14.24	12.81	518.69	38.43	460.10	360.43	0.419
171.60	14.44	12.70	518.69	38.96	463.52	360.43	0.423
201.60	14.12	12.77	518.69	33.15	408.89	342.34	0.371
231.60	14.12	12.86	518.69	30.03	394.11	341.20	0.358
261.60	14.23	12.97	518.69	32.53	434.43	366.27	0.395
291.60	14.25	12.91	518.69	36.13	446.45	360.59	0.407
321.60	14.24	12.86	518.69	36.62	449.16	360.50	0.409
351.60	14.24	12.87	518.69	35.79	451.51	366.25	0.411
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	RPL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL MACH NO.
21.60	570.16	263.87	306.29	39.91	477.36	0.435	1.51
51.60	570.16	268.56	301.61	39.59	473.23	0.431	1.51
81.60	570.16	264.71	303.46	39.88	476.37	0.434	1.51
111.60	570.16	270.83	299.34	39.15	474.07	0.432	1.52
141.60	570.16	265.98	284.19	36.25	458.99	0.418	1.48
171.60	570.16	291.45	278.71	37.71	455.52	0.416	1.47
201.60	570.16	223.60	346.57	45.35	467.14	0.442	1.40
231.60	570.16	197.23	372.93	47.54	505.47	0.459	1.40
261.60	570.16	233.61	336.55	42.58	497.42	0.453	1.52
291.60	570.16	263.23	306.93	40.40	473.53	0.431	1.49
321.60	570.16	267.93	302.24	39.98	470.43	0.429	1.49
351.60	570.16	264.05	306.11	39.89	477.33	0.435	1.51

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, 1.5V/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.21 IMMERSION NO. = 1		RADIUS = 17.081		SLOPE = -0.83			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	18.37	14.92	570.61	57.08	629.15	341.93	0.553
45.00	18.36	15.07	569.26	55.12	612.97	350.53	0.539
75.00	18.36	15.07	568.54	54.76	611.98	353.11	0.538
105.00	18.36	15.07	567.31	54.90	611.49	351.61	0.539
135.00	18.37	15.07	567.81	55.32	612.55	348.54	0.539
165.00	18.45	15.33	568.64	57.25	593.20	320.91	0.521
195.00	18.71	15.34	574.98	58.51	617.94	322.78	0.541
225.00	18.75	15.13	580.87	61.90	643.70	303.19	0.562
255.00	18.27	14.57	584.13	64.11	657.79	287.22	0.573
285.00	18.45	14.95	580.59	63.43	637.99	285.37	0.556
315.00	18.43	14.92	575.80	61.04	646.25	312.91	0.567
345.00	18.41	14.88	574.09	58.31	637.47	334.88	0.559
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	982.74	528.13	454.61	53.05	568.65	0.500	1.79
45.00	982.74	502.85	479.89	53.85	594.28	0.523	1.85
75.00	982.74	499.83	482.91	53.83	598.24	0.526	1.86
105.00	982.74	500.29	482.45	53.92	596.99	0.526	1.86
135.00	982.74	503.72	479.02	53.96	592.40	0.522	1.84
165.00	982.74	496.91	483.84	56.45	580.59	0.510	1.72
195.00	982.74	526.93	455.81	54.70	558.52	0.489	1.71
225.00	982.74	567.83	414.92	53.84	513.89	0.448	1.58
255.00	982.74	591.77	390.98	53.70	485.14	0.423	1.47
285.00	982.74	570.61	412.13	55.30	501.29	0.437	1.47
315.00	982.74	565.44	417.30	53.14	521.59	0.457	1.61
345.00	982.74	542.42	440.32	52.75	553.20	0.485	1.74

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.51 IMMERSION NO. = 3		RADIUS = 14.056		SLOPE = 3.14			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	17.48	14.27	550.15	52.57	609.86	370.66	0.546
45.00	17.52	14.32	549.97	52.58	608.49	369.75	0.545
75.00	17.50	14.28	550.14	52.80	610.72	369.24	0.547
105.00	17.50	14.29	549.77	52.43	608.73	371.15	0.545
135.00	17.45	14.27	548.76	53.58	606.56	360.13	0.543
165.00	17.40	14.45	548.92	55.49	584.01	330.87	0.522
195.00	17.56	14.56	555.05	56.72	597.78	328.02	0.532
225.00	17.56	14.34	556.28	55.42	612.80	347.80	0.545
255.00	17.68	14.15	558.15	53.74	643.02	380.32	0.573
285.00	17.47	14.30	551.68	53.23	606.69	363.17	0.542
315.00	17.46	14.24	549.49	52.62	611.14	371.02	0.547
345.00	17.46	14.30	549.24	52.72	605.25	366.60	0.542
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	808.70	484.28	324.42	41.19	492.58	0.441	2.13
45.00	808.70	483.26	325.44	41.35	492.57	0.441	2.13
75.00	808.70	486.45	322.24	41.11	490.08	0.439	2.12
105.00	808.70	482.48	326.22	41.31	494.14	0.443	2.14
135.00	808.70	488.11	320.59	41.68	482.15	0.432	2.07
165.00	808.70	481.24	327.46	44.70	465.52	0.416	1.92
195.00	808.70	499.74	308.96	43.29	450.61	0.401	1.90
225.00	808.70	504.54	304.16	41.17	462.04	0.411	1.98
255.00	808.70	518.49	290.21	37.35	479.39	0.426	2.14
285.00	808.70	485.99	322.72	41.62	485.84	0.434	2.08
315.00	808.70	485.63	323.07	41.05	491.97	0.441	2.13
345.00	808.70	481.59	327.12	41.74	491.33	0.440	2.11

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 1.21		RADIUS = 11.030		SLOPE = 11.17			
IMMERSION NO. = 5							
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
15.00	17.21	13.30	549.59	48.88	653.34	429.66	0.588
45.00	17.53	13.82	549.06	48.84	653.14	429.53	0.588
75.00	17.25	13.79	549.99	48.82	653.31	433.45	0.593
105.00	17.53	13.79	548.83	48.09	656.15	430.56	0.591
135.00	17.20	13.75	549.27	48.98	657.19	431.33	0.592
165.00	17.37	13.91	548.22	50.91	631.71	398.32	0.568
195.00	17.59	13.94	550.64	52.81	631.38	391.64	0.566
225.00	17.40	13.85	553.86	50.73	642.93	406.96	0.576
255.00	17.24	13.72	554.99	48.35	666.52	442.95	0.598
285.00	17.27	13.72	550.46	48.37	666.50	442.77	0.600
315.00	17.46	13.85	549.29	49.04	644.27	422.34	0.579
345.00	17.47	13.83	549.25	49.30	647.59	422.29	0.583
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
15.00	634.60	492.13	142.42	18.34	452.55	0.407	1.44
45.00	634.60	492.03	142.57	18.36	452.57	0.407	1.44
75.00	634.60	495.47	139.13	17.80	455.23	0.410	1.45
105.00	634.60	495.13	139.47	17.95	452.59	0.408	1.44
135.00	634.60	495.83	138.77	17.83	453.10	0.408	1.44
165.00	634.60	490.30	144.30	19.91	423.65	0.381	1.34
195.00	634.60	502.98	131.62	19.03	403.70	0.362	1.28
225.00	634.60	497.73	136.87	18.59	429.36	0.384	1.35
255.00	634.60	498.03	136.57	17.14	463.53	0.416	1.46
285.00	634.60	498.18	136.43	17.13	463.31	0.417	1.47
315.00	634.60	486.53	148.07	19.32	447.54	0.402	1.41
345.00	634.60	490.96	143.64	18.79	446.05	0.401	1.41

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Continued).

PLANE NO. = 2.20		IMMERSION NO. = 1		RADIUS = 17.130		SLOPE = 0.24			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	IGV. TEMP.	ASS. FLOW ANGLE	ABS. VELOCITY	AXIAL VELOCITY	ABS. MACH NO.		
6.83	17.86	16.19	554.44	-3.01	432.86	432.26	0.377		
36.83	17.86	16.19	553.24	-1.25	432.71	432.61	0.377		
66.83	17.86	16.19	552.93	-0.67	432.83	432.80	0.377		
96.83	17.85	16.17	552.72	-0.72	433.62	433.59	0.378		
126.83	17.83	16.16	552.00	-0.90	433.19	433.13	0.378		
156.83	17.74	16.17	551.79	0.45	425.37	425.85	0.371		
186.83	17.89	16.19	552.36	1.86	435.99	435.74	0.380		
216.83	18.01	16.22	559.16	0.52	449.82	449.80	0.390		
246.83	17.86	16.21	571.44	-4.38	433.88	432.61	0.375		
276.83	17.71	16.19	571.91	-6.76	415.70	413.80	0.360		
306.83	17.77	16.19	568.38	-6.00	424.48	422.15	0.368		
336.83	17.82	16.19	555.53	-6.13	429.06	426.61	0.373		
CIRC. POSITION	WHEEL SPEED	ABS. TANG. VELOCITY	REL. TANG. VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW		
6.83	985.56	-22.75	1008.31	66.80	1097.06	0.955	2.21		
36.83	985.56	-9.40	994.97	66.50	1084.95	0.945	2.22		
66.83	985.56	-5.04	990.60	66.40	1081.02	0.942	2.22		
96.83	985.56	-5.49	991.05	66.37	1081.75	0.943	2.23		
126.83	985.56	-6.78	992.35	66.42	1082.75	0.945	2.22		
156.83	985.56	3.35	982.21	66.56	1070.56	0.934	2.19		
186.83	985.56	14.14	971.43	65.84	1064.59	0.929	2.24		
216.83	985.56	4.09	981.47	65.38	1079.64	0.937	2.29		
246.83	985.56	-33.15	1018.72	66.99	1105.77	0.957	2.19		
276.83	985.56	-49.08	1034.64	68.20	1114.32	0.962	2.09		
306.83	985.56	-44.37	1029.93	67.71	1113.09	0.965	2.14		
336.83	985.56	-45.79	1031.35	67.53	1115.10	0.970	2.18		

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule $40^\circ/3^\circ$ (Continued).

PLANE NO. = 2,20		IMMERSION NO. = 3		RADIUS = 14.420		SLOPE = 1.13			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.		
29.00	17.22	16.09	547.32	6.13	355.48	353.45	0.313		
59.00	17.20	16.10	547.22	6.41	350.71	348.52	0.309		
89.00	17.19	16.10	547.27	7.59	349.78	346.72	0.308		
119.00	17.21	16.10	547.37	8.06	352.58	349.10	0.310		
149.00	17.19	16.12	547.58	10.53	345.43	335.61	0.304		
179.00	17.04	16.15	546.75	11.85	316.28	309.54	0.278		
209.00	17.26	16.15	548.20	9.26	342.23	337.77	0.301		
239.00	17.19	16.14	553.39	7.81	344.61	341.41	0.301		
269.00	17.36	16.08	554.89	5.33	379.48	377.84	0.332		
299.00	17.24	16.06	548.98	4.41	364.44	363.37	0.320		
329.00	17.29	16.05	547.94	3.35	372.82	372.18	0.328		
359.00	17.25	16.06	546.90	4.15	364.95	363.99	0.322		
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW		
29.00	829.64	37.97	791.67	65.94	866.99	0.763	2.00		
59.00	829.64	39.17	790.48	66.21	863.90	0.760	1.98		
89.00	829.64	46.18	783.47	66.13	856.76	0.754	1.97		
119.00	829.64	49.42	780.22	65.89	854.76	0.752	1.98		
149.00	829.64	63.14	766.51	66.10	838.37	0.737	1.93		
179.00	829.64	64.95	764.70	67.96	824.97	0.725	1.76		
209.00	829.64	55.07	774.57	66.44	845.01	0.743	1.92		
239.00	829.64	46.66	782.79	66.44	854.00	0.747	1.92		
269.00	829.64	35.23	794.41	64.56	879.69	0.770	2.12		
299.00	829.64	28.00	801.64	65.62	880.15	0.774	2.05		
329.00	829.64	21.81	807.84	65.26	889.45	0.783	2.11		
359.00	829.64	26.38	803.26	65.62	881.88	0.777	2.06		

Table XIII. Circumferential Distortion Flow Survey Data; 70% Speed, Near Stall, IGV/Stator Schedule 40°/8° (Concluded).

PLANE NO. = 2.20 IMMERSION NO. = 5		RADIUS = 11.775		SLOPE = 1.14			
CIRC. POSITION	TOT. PRESSURE	STATIC PRESSURE	TOT. TEMP.	ABS FLOW ANGLE	ABS VELOCITY	AXIAL VELOCITY	ABS MACH NO.
18.56	16.93	15.97	547.11	13.05	328.49	320.01	0.289
48.56	16.86	15.99	547.16	13.61	315.11	306.27	0.277
78.56	16.85	15.97	547.16	13.11	315.91	307.67	0.278
108.56	16.83	15.97	547.01	12.73	312.19	304.51	0.274
138.56	16.81	15.97	546.85	12.88	308.98	301.21	0.271
168.56	16.64	15.03	546.18	16.16	264.31	253.87	0.232
198.56	16.41	16.06	545.66	21.14	201.98	188.38	0.177
228.56	16.75	16.04	550.33	19.86	286.06	289.05	0.250
258.56	16.92	15.97	552.09	14.57	328.99	318.41	0.288
288.56	17.03	15.94	549.50	13.97	351.78	341.37	0.309
318.56	17.02	15.88	547.48	11.56	360.14	352.84	0.317
348.56	17.00	15.90	546.65	10.39	351.36	345.60	0.309
CIRC. POSITION	WHEEL SPEED	ABS TANG VELOCITY	REL. TANG VELOCITY	REL. FLOW ANGLE	REL. VELOCITY	REL. MACH NO.	LOCAL WT. FLOW
18.56	677.47	74.15	503.31	62.06	682.93	0.600	1.06
48.56	677.47	74.14	503.33	63.09	676.61	0.594	1.02
78.56	677.47	71.67	505.80	63.07	679.45	0.597	1.02
108.56	677.47	68.79	508.67	63.42	680.59	0.598	1.01
138.56	677.47	68.67	508.60	63.67	679.06	0.597	1.00
168.56	677.47	73.55	503.91	67.20	655.10	0.575	0.84
198.56	677.47	72.85	504.61	72.69	633.28	0.555	0.62
228.56	677.47	97.19	580.28	65.13	639.62	0.559	0.89
258.56	677.47	82.75	594.72	61.84	674.59	0.590	1.05
288.56	677.47	84.95	592.52	60.05	683.83	0.601	1.13
318.56	677.47	72.18	605.29	59.76	700.62	0.617	1.17
348.56	677.47	63.36	614.10	60.63	704.67	0.620	1.15